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Original Articles.

A FURTHER STUDY OF PSEUDO, OR MODIFIED SMALLPOX (?)*

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At Atlantic City one year ago I reported my experience with 300 cases of pseudo, or modified smallpox (?) This report was made from a personal, bedside study of these cases in all stages of this disease. I presented statistics showing that in some cases not one of the family escaped; in others, only one or two members of a large family showed any signs of the disease; and in others but one case in a large family, even though the members of the family came in daily contact with the disease. It was further shown that the disease lacked many of the distinctive features of true smallpox. Of the 300 cases seen by me, the ordinary fever, or the fever of invasion, was, in a large majority of cases, slight; the headache, backache and other symptoms were often severe, but the gravity of these prodromata were not always in a direct proportion to the amount of the eruption, indeed this ratio was sometimes reversed; a syphilitic or scrofulous dyscrasia, or diathesis was an important factor in determining the gravity of the disease; and finally, in every case presenting any grave symptoms at all—these cases were extremely rare—syphilis or scrofula could be proved to be present.

It was further shown that none of these cases presented any secondary symptoms; that the temperature did not rise above normal in 80 per cent. of these cases, and that I never found it above 101 in any case; that the pustular stage was lacking in all of these cases—there being formed in the vesicles, instead of pus, an opaque, lymphoid fluid, which began to show in the vesicles within twenty-four hours from the beginning of the vesicular stage; that the vesicles were unilocular, not multilocular, as in variola vera; and that when opened in any way they would collapse at once, a condition which did not take place in true smallpox.

I also demonstrated that around the base of these vesicles there was no puckering, that while some of them appeared umbilicated, it was an apparent, not real umbilication, due to the escape of some of the fluid contents of the vesicle at the apex which permitted a puckering at the base, and this fluid becoming discolored by contact with air gave it an appearance of a central depression. In my paper it was likewise pointed out that in not one of the 300 cases reported was there, after the appearance of the initial papule and subsequent vesicle, any inflammatory area around their bases or in the interspaces between them, a thing claimed to be one of the distinctive features, along with the secondary fever, of variola vera. Then, too, in none of these cases was there any prostration. After the disappearance of the prodromic fever the patients all felt well and were ready and willing both to eat and to work, except in the few cases where the eruption involved the palms of the hands and the soles of the feet. No patient was in bed longer than a week, three days being the rule with 80 per cent. of these patients. In what should have been the pustular stage, but in these patients was the stage of desiccation, or desquamation, there was no odor, even when several were kept in one room; the only smell present being the odor peculiar to the negro race. It was also noticed that not more than 10 per cent. of these cases were at all pitted, and that in many of the cases, which appeared at first to be typically marked, the pits have gradually disappeared, leaving no more pits than you would find in any severe case of varicella.

In that paper I did not attempt to designate the disease by any special name, but suggested, "pseudo-smallpox." In closing my paper I asked: "What is it?" In the discussion which followed, the state health officials largely took the position that it was true smallpox, reasoning by exclusion, and holding to the position that it could be nothing else, because it did not correspond as nearly with any other eruptive fever as it did with smallpox. Whenever any discussion of this disease has been had, the same question has been asked so often that, to use a slang expression, this query has appeared to be a part of the stock in trade of those who have opposed the idea of a new disease: "If this is not smallpox, what is it?"

The very way in which the question has been put implies on the part of the one putting it a doubt as to the certainty of the identity of the disease with true variola. I also stated in my paper the fact that it was evident that to express any opinion as to this disease being other than smallpox was to oppose the position taken by the state and county health officials, as a rule, but that many of the members of the medical profession, who have been familiar with variola vera during and immediately after the war, doubted that these two diseases were identical. Several of the state boards of health had issued pamphlets describing it as a mild, and others, as a modified smallpox, but not many undertook to advance any reason for this modification of the disease, except, indeed, one weak brother who timidly suggested that it was due to long-continued vaccination—a suggestion totally at variance with the facts in the case, for it was shown that for generations the negro had been vaccinated scarcely at all, and that there had been no systematic vaccination in the country districts since the sixties, and yet this disease was most common and milder among negroes in the rural districts. The possibility of this disease being smallpox modified by long-continued vaccination is absurd.

* Read in Symposium on Smallpox, in the Section on Practice of Medicine, at the Fifty-second Annual Meeting of the American Medical Association, held at St. Paul, Minn., June 4-7, 1901.

Equally absurd is it to claim that the low mortality has been due to our better understanding of the disease and a more common-sense management of it; for the facts are, that if let alone, no medicine given and no transference to pest-houses made, the mortality would be practically nil; but with all the diverse managements and mismanagements of the disease in the state of Tennessee, in 8197 cases reported from Oct. 1, 1899, to April 1, 1901, there had been but 162 deaths, and 50 of these were in the pest-houses at Memphis and Nashville, where cases of variola vera are found and treated every year. No doubt some cases of variola were included in this report, yet the death-rate has been about 2 per cent. It is also significant that in many counties of the state the presence of this disease was utterly ignored and in others the treasuries were almost bankrupted in their effort to stamp out the disease—one county spending $32,000 in a vain effort to suppress it, and another, after spending $10,000, with the disease constantly on the increase, declined to maintain longer any pest-houses or to go to any further expense to suppress it, and in spite of this fact, found itself free from further new cases within thirty days.

The plea, therefore, that improved methods of treating and managing the disease could have been a factor in the lessened death-rate was unsustained. If from the reported deaths are subtracted all the cases in which the deaths occurred during, and not caused by, the disease, as I found in several of my 400 cases, the death-rate becomes practically nil, outside of the pest-houses in the larger cities.

The grouping together of cases of any disease, with all the unsanitary surroundings of the modern smallpox buildings in the country counties, arranged for the care of the negro population, would tend much to increase the mortality rate of the disease. Those of you who are accustomed to the arrangements made in cities for the care of infectious and contagious diseases, seeing the rough board shanties in which dozens of cases, old and young, male and female, in all stages of the disease, are placed on cots or on the floor in one large room, would expect a death-rate of at least 25 per cent. Instead, our state authorities give you an epidemic of variola vera, with a mortality of less than 2 per cent., with many of the cases never confined to bed; and in the large majority of cases—two-thirds at least—in bed less than a week, and returning to work in less than two weeks, complaining of no loss of strength and having no sequelæ.

The cases, somewhat over 100, coming under my own observation since my report of 1900, have served to confirm my doubts as to the possibility of the epidemic being one of variola vera. The State Board of Health predicted, from former experiences with variola, that the cases would become more severe, and the epidemic more difficult to control with the advent of cold weather; that so long as the weather was warm and good ventilation could be maintained, the cases would do well, and the prognosis would be favorable, but that when the cabins and huts of the poor had to be closed to secure proper warmth, then the death-rate would grow.

The first case to which I was called in the second epidemic began about the middle of December, 1900, and, as before, among the negro population of our county. Children, whose mother had died in an infected house, and who had themselves been exposed to the disease in an adjoining county, were sent by rail with their bedding and household effects into this county. About ten days after their arrival they began to suffer with backache and headache, but, having the whooping-cough, their grandparents suspected nothing until the appearance of the eruption. At that time I was called, and recognized my visitor of the year before. The persons who hauled the bedding and personal effects from the station to their home, a distance of several miles, never developed the disease; nor did any of the visitors to the house, of whom there were several, although they did not sleep in the house. All of the children in this family, four in number, contracted the disease; the father and mother escaped, one of them having been vaccinated, the other not. A daughter, visiting and remaining in the house, carried the disease to her family, four in number, but this was the only family which contracted the disease from the original focus. One of the children was taken by relatives and kept by them. This child entered the public school of the neighborhood, had a mild attack of the malady, was out of school but one day, and was a regular attendant after that till he was taken to Illinois; he was then in the stage of desiccation. His relatives with whom he lived both had the disease. This ended the epidemic in that neighborhood, making a total of 16 cases.

From that time until April 1, cases were reported in the southern portion of the county. In one house there was one case, an adult male, who had been vaccinated several years before. His wife and child, who had not been vaccinated and who were with him all the time in the same room, escaped, as did another adult male, who occupied another room. In another case, but one in a different locality, every one had the disease, while but a short distance away, in another family, there were only two or three cases.

In January, I saw one case of variola vera, contracted in Texas. No cases developed from this one, as all in the neighborhood had been forewarned. This patient was white, as was one other in the 110 cases constituting the epidemic in the county.

In March, on a tour of inspection, I saw about 35 cases, in seven or eight families. They were in all stages of the disease, many of them at work, and but one in bed; he was a male, aged about 50, and had a typical vaccine mark on his arm. In the 110 cases reported, one died *with*, but not on account of the disease. She was 86 or 87 years of age, bedridden for months from la grippe—simply waiting for some disturbing factor to occasion her death.

Some of the many anomalies met with in the epidemic of 1899-1900 and 1900-1901 have already been mentioned. In one large family there was but one case, and in that the patient had been in close contact with all the household during the period of invasion and first three days of the eruption, supposing that he was developing a case of measles. After that time he went to work on his own premises, never being shunned by any member of the family, although he slept by himself. As stated, his was the only case in the family, and there has been no case since that time, in spite of the fact that neither was an effort made to fumigate his house, nor were any other preventive measures taken, except to boil the bedding and wearing apparel. All the members of this family were vaccinated as soon as his case was discovered, but on not more than half was the result successful.

In another family there developed among the children, who were attending school within a few hundred yards of their house, case after case before their condition was

reported. None of the children affected had been vaccinated, nor had any of the children attending the school, and although the children did not lose more than two days from school, yet no one contracted the disease. Certainly continued and oft-repeated vaccination was no factor in this and several other families.

Another case attended by me this year was located within fifty yards of a schoolhouse where school was held daily. The patient, aged about 20, was very popular among the school children, who visited him daily. Not one contracted the disease, neither did his mother nor a smaller sister, who slept in the same room with him, and none of them had been vaccinated.

I reported in my paper of last year, a family of ten, in which one member developed the disease, and was seen by me on the seventh day of the eruption. All the other members of the family were vaccinated on the next day. The virus failed to "take" in three cases. Of the three who escaped the disease, two were the wife and child of the sick man, and on whom vaccination had proved a failure. On the sixth day after vaccination the other six had typical arms, and yet on the thirteenth day after vaccination the usual prodromic symptoms developed and all of them had the disease, but in a milder type than did the first patient. Query: "How many would have escaped had they not been vaccinated?" Since that family vacated the house in which they suffered with the disease, another family moved in and lived there without contracting it.

The house had not been disinfected, nor was any systematic work done in that line in any house where the disease had been present. Anyone who knows anything about a typical negro cabin would realize how completely any effort in that line would fail. If the germs of any disease can be retained in any house or bedding, the negro cabin of Tennessee would be a typical abiding place.

I have to-day—May 15, 1901—visited a white male, with the eruption peculiar to this modern smallpox. This man is able to prove that he has not been off his premises for a month, and that no one, aside from his family and known friends, has been on the premises. He has a typical vaccination scar on his arm, due to vaccination in boyhood. On the fourth day of the eruption we find it papular, vesicular and opaque lymphoid; and some of the vesicles desiccating. Not a vesicle has any inflamed area around its base. To all intents and purposes the man is well, and yet the eruption is more extensive than in severer cases seen by me. I advised him to keep himself from contact with any one except his family, and to work on his own premises. His wife was vaccinated, and so were several others who were exposed. This case stands, thus far, as one originating spontaneously in a person previously vaccinated.

In one town in this county the city board of health refused to vaccinate further and allowed those with the disease to pursue their usual vocations, except when the eruption was in the vesicular, or early so-called purulent stage. Their reason for pursuing this course was said to be that there was less suffering and inconvenience from the disease than from the vaccination. In that town of 600 or 700 inhabitants there were 100 cases, with one death; and that occurred in the case of an old, feeble invalid who was reported to have died as the result of drinking a throat-wash containing carbolic acid. The cause of this death was given as: "Congestion of the lungs." The hotel-keeper's whole family had the disease, but the house was kept open for guests during the entire time of their sickness.

In one of the civil districts of this county, about fourteen miles distant from this town, there were about 50 cases of this modern, modified smallpox, but I was politely informed that I was not needed there, as they would be cared for at no expense to the county, and that they did not want any sore arms from my vaccinations. With this message, couched in polite terms, the vaccine virus, sent to the physicians of these districts, was returned to me, and I heard nothing more from them; in one trip through that section I had satisfied myself as to the nature of the disease.

In no previous epidemic of variola have there been so many cases reported occurring among those vaccinated. It is a well-known fact that a person who has been vaccinated may contract varioloid, but this rarely occurs, and then the mortality in such cases of varioloid is more than 5 per cent. In this epidemic, vaccinated persons suffered together with the unvaccinated, and apparently just as much. So few persons in this county have been vaccinated since the civil war that no comparison can be instituted along that line. Soldiers, who returned from prisons, brought back such horrifying reports of the suffering from vaccination that nothing short of a case of smallpox could induce them to permit any of their families to be exposed to what they conceived to be the dangers of vaccination. The medical journals abundantly confirm this statement, as do scores of private letters received by me in regard to this point.

I tabulate, from a paper read by Dr. Runyon, of Clarksville, Tenn., 106 cases of modern (?) smallpox, or variola. The tables show 70 in persons either not vaccinated or unsuccessfully vaccinated, and 36 in cases vaccinated, many of them within twelve months. This shows a little over one-half as many cases among persons vaccinated as among the non-vaccinated. In these 106 cases one death is reported, that of an unvaccinated person. In this report of Dr. Runyon's, he writes me: "Dr. McReynolds (Elkton, Ky.) wrote me that, with the exception of the first case that died and the one vaccinated with humanized virus, he could discern no difference between the course of the disease in the vaccinated and the unvaccinated. The one vaccinated with humanized virus was exceedingly mild." It is neither necessary to reiterate the same point made in the letters with my report of last year, nor to more than refer to the fact that many letters received during 1901 have emphasized the same point.

Now, if, when the ratio of the non-vaccinated to the vaccinated, at the beginning of this epidemic, was not less than ten to one, the ratio of those who had been vaccinated and yet had this disease, to the number of non-vaccinated who had it, was about equal, can vaccination be said to have controlled to any great extent the epidemic? Then, too, it must be remembered that in the South the better class of people only had been vaccinated, that the lower class of whites and negroes were almost wholly without the protective influence of vaccination; does not the ratio presented above appear peculiar? I might thus continue to point out peculiarities in this epidemic, but enough has been done in this line.

I may add one more peculiarity. Every layman who has ever had or seen smallpox, every soldier who was conversant with variola vera in the sixties, is prompt to make this statement when he sees one of these cases, "It is not like the smallpox I had, or nursed." All of

the laity are not fools. Neither do I believe that every physician who hesitates to call this epidemic variola, "should change his vocation," as do some of our health officers, any more than I should think the same course right and proper in the case of the physician who doubts the propriety of styling every case of continued fever refusing to respond to quinin, typhoid fever. Some of us at least are not seeking notoriety by attempting to discover some new disease, but are honestly trying to determine what this disease may be. Personally, I know that my position is not one popular with the profession as a whole. The position of "me too," is an easy one to assume, but to call every eruption, which is first papular and then vesicular, met with in adults, smallpox, is, to say the least, not up to my standard of common honesty.

I append here a tabulated statement of the diagnostic points between this eruptive disease and variola vera. In compiling it I am indebted to Dr. Mayo, of Salt Lake, Utah, for valuable suggestions.

DIFFERENTIAL DIAGNOSIS.

Type of Prevailing Disease.	*Smallpox.*
There are no varieties. All are of the same general character and differ in degree only.	The varieties are: Varioloid, discrete, hemorrhagic, confluent.
INCUBATION.	
Fourteen to eighteen days.	Fourteen to twenty-one days.
SYMPTOMS, FIRST TO THIRD DAY.	
At onset patient complains of cold; feels as though an attack of grip or tonsilitis were coming on. Temperature 102-105. Little or no vomiting. Pulse full and rapid. Little or no prostration. No delirium. No convulsions in young. In a few cases there may be sleeplessness.	Onset sudden, violent chill, persistent vomiting, agonizing pain in back and head, shooting down the limbs. Temperature, 103-104. Pulse full, strong and rapid. Prostration great from onset. Eyes injected. Sleeplessness, delirium, convulsions in young.
SYMPTOMS, THIRD DAY.	
No coarse red spots appear.	Coarses red spots appear on lips and forehead. With appearance of these spots temperature falls to normal and patient is comfortable.
SYMPTOMS, FOURTH DAY.	
Eruption appears. Its character is generally that of acne. In some instances the shot-like papulæ appear, but rarely. Temperature falls to normal and patient almost invariably gets up, if he has gone to bed, and says he is well. The eruption appears on face first. In men, about the forehead, cheek and chin. In women and children, irregularly about the face. There is usually a sore throat.	Small, red spots appear on forehead at juncture of hair, followed by their appearance on extremities. Papulæ follow red spots. They have a shot-like feeling.
SYMPTOMS, FIFTH DAY.	
Acne-like eruption and papulæ develop into vesicles, which assume an opalescence at once. These vesicles are unicellular and are not umbilicated. The serum which exudes at their apices dries and turns brown, which in some cases give them the appearance of umbilication. There is no puckering of the vesicle at its border. The temperature is generally normal unless it rises from abscess formation or other causes. The vesicle may dry up and the disease may be said to have aborted. A rapid recovery follows.	Papulæ appear on wrists and forehead.
SYMPTOMS, SIXTH TO NINTH DAY.	
The vesicles become filled with an opaque, lymphoid fluid, in some cases with a brown nucleus in the center, which gives it an umbilicated appearance. This vesicle with its opaque fluid, miscalled pus, shrinks to one-half its diameter and b comes a thin, brown scab, perfectly circular. No stench. The patient is well after the appearance of the eruption. He insists on getting up and having plenty to eat. If the eruption is copious he looks bad, but he will tell you he feels well. The eruption in a few cases affects the conjunctivæ. There is no secondary fever. From this time on it is simply a matter of scabs dropping off. By the tenth day the patient may be entirely clear. If the eruption spreads over the entire body he may not be clear of scabs until the fourteenth day.	Vesicles appear in place of the papulæ, and eruptions spread gradually over entire body. The vesicles are umbilicated and multicellular. On the eighth and ninth days the vesicles become pustules and each is surrounded with a broad, red band, or efflorescence, features become distorted; severe rigors and fevers; original symptoms return; stench is beginning. Great delirium and convulsions in young. Very critical period.
SYMPTOMS, TENTH TO TWELFTH DAY.	
	Pus oozes and forms scab, stench exceedingly bad.
SYMPTOMS, SEVENTEENTH TO TWENTY-FIRST DAY.	
	Scabs drop off, leaving red, glistening pits, which soon become white. Ulceration is deep, reaching the corion. Ophthalmia is generally present Pustules have invaded mouth, larynx, pharynx and trachea. Petechiæ form on lower part of abdomen and inner aspect of thighs, on first and second days in some cases.
PAPULÆ.	
Papulæ when present same size as smallpox, perhaps a little smaller, but fewer in extent. There may be no papulæ. Vesicles range in size from the head of a pin to the size of a split pea. Not umbilicated and when punctured collapses. The vesicle is unilocular. Convalescence begins on appearance of eruption. The so-called pustule does not extend into the derma. The epidermis is the only structure of the integument involved. Hence, there is no pitting. The vaccinated take the disease.	Papulæ are about size of No. 4 shot and have a translucent appearance, encroach on entire body, including palms and soles. Appears on face and hands first. Vesicle is umbilicated and multilocular. So is the pustule and neither will collapse *in toto* if pricked with a needle.
PROGNOSIS.	
Good. Death rate nominal. When all cases are included for a whole state, both of those cases dying with this disease, and with similar diseases reported under the general name of smallpox—less than 2 per cent.	Discrete, 6 to 25 per cent. Confluent, 50 per cent. Hemorrhagic, all perish. In general the progress depends on age of patient, variety of attack and vaccination. In an ordinary epidemic, all cases included, the mortality is from 25 to 35 per cent.

Fourteenth International Medical Congress.—The preliminaries of this congress, to be held at Madrid, in 1903, are well under way. The date is April 23 to 30, and the fee 30 pesetas. The executive committee has organized sixteen sections, which includes odontology and military medicine. The president is Professor Julian Calleja y Sanchez; treasurer Dr. Jose Gomez y Ocena.

SMALLPOX—OLD AND NEW.*

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The above title evidences our belief that the epidemic which has been prevailing throughout the United States and our new possessions for the past two years, is not identical with the old-fashioned smallpox of twenty years ago. I have been identified with two epidemics—twenty years apart—and though they were evidently both species of smallpox, they were nevertheless very dissimilar in many characteristics. Without exception, the descriptive adjectives applied to our later epidemic, whether through the reports in our daily papers, or in the more authoritative reports in the medical journals, all contain such terms as "mild," "modified," "light type," etc., and many medical men, even up to this day, deny that our present disease is, in fact, smallpox.

It is safe to assert that more of the recent cases have been diagnosed chicken-pox than smallpox, and I am free to confess that in the first two cases that I saw—a year having elapsed between the cases—I was of the opinion that they were not true smallpox. When we passed through the epidemic twenty years ago there was never any difficulty in diagnosing the disease, though I had never previous to that time seen a case. The attacks then were so typical of the disease, as described in our text-books, that there could be no mistaking it. This season when we went, confident of our ability to differentiate this disease from all others, and were compelled very meekly and modestly to say: "Well, I do not know. I am in doubt as to whether it is a very severe case of chicken-pox or a very mild case of smallpox," and had to send to our state boards of health for a decision, you can readily imagine our embarrassment.

I want to show two or three peculiarities of our recent epidemic. The first case was the wife of a man who was markedly pitted from an attack of smallpox occurring several years previously. This man contracted the new disease from his wife; a sister and little child, neither of whom had been vaccinated and who were in the same rooms with my patient throughout the attack, were not affected by it. In fact, the question as to whether immunity or mitigation of the severity of our recent cases was conferred by vaccination was very much of a question. It is not at all a settled fact that the patients previously vaccinated showed a modified form in any manner. We had several patients that had never been vaccinated, but we are unable to say that the disease was more severe in their cases than in those who had been vaccinated. Of course, here would come in the question of an inherited immunity, vaccination having been very thorough of late years on the part of the parents of most of the patients. This fact has been advanced as a possible cause of the unquestionable mildness that the present epidemic has assumed. Whether through the thorough vaccination of generations of ancestors partial immunity can be established admits of some doubt; and yet it is a very ingenious explanation of an otherwise unexplainable fact.

I recently saw a family of thirteen that had passed through the disease, all having been afflicted; the parents only had been vaccinated, and yet I was unable to see that the vaccination had in the least mitigated the severity of the disease. The parents were pitted as much as the eleven children, and they claimed they had been just as sick. This family had been infected by a child with what a local physician called chicken-pox.

Notwithstanding these stubborn facts, we do not desire to be classed in the ranks of the disbelievers in the efficacy of vaccination. In fact it is our intention, when opportunity offers, to act on the suggestion of Dr. Stern, of New York. He presented, in a paper to the Manhattan Clinical Society, in April, 1901, a report of ten or twelve cases of uricacidemia, gouty, rheumatic and neuralgic diseases that had been materially improved in condition and entirely relieved of pain by vaccination.

* Read in Symposium on Smallpox, in the Section on Practice of Medicine, at the Fifty-second Annual Meeting of the American Medical Association, held at St. Paul, Minn., June 4-7, 1901.

SANITARY FEATURES OF SMALLPOX.*

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Smallpox is a disease which possibly above all others should be dealt with by health authorities. The question as to whether it is best handled by local or state boards of health will depend, of course, largely upon the organization and efficiency of the former. In well-organized communities, such as is usually found in the larger cities, it is wisest to deal with the cases at the place of development rather than to attempt any transportation. In some of the more scattered cases, which will come under the jurisdiction of the county boards of health, oftentimes the intervention and usually more rigid management of the state authorities is unquestionably required. This occasionally will meet with some local opposition by individuals who may regard it as an act usurping the local rights, but experience had shown that a great many personal interests are constantly at stake and these often tend greatly to hamper the thoroughness of the physician in charge. Upon the outbreak of one or more cases in a locality, a competent physician should be placed in charge and be given as nearly as possible absolute power. By so doing, all unnecessary and dangerous delay, which results from debates and diversities of opinion and interests, will be avoided and a better concentration of action be obtained. The physician in charge should be in communication with the Board of Health, preferably by means of a telephone from the infected district. In this way he will avoid much unnecessary traveling about, which, even though all precautions are observed, tends to unnecessarily alarm the community.

The strongest possible police co-operation should be obtained, in order to prevent the numerous acts, which are almost certain to occur, in a disregard to the orders, and vigorous legal prosecution should be instituted at once upon the least wilful infringement of quarantine regulations.

This is necessary, because if the slightest laxness is permitted in the beginning, it will be almost an impossibility to again establish the necessary discipline. Great care should be exercised also, in the granting of any privileges, which might be construed as special dispensations. Again, in all epidemics there will always be found floating about all kinds of reports and rumors, which tend to keep the community in an unnecessary state of excitement and have an injurious effect upon all commercial enterprises of the locality. In order to avoid this as much as possible, we have found it a satisfactory plan to make a daily official report to the newspapers, stating the exact condition of affairs as

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nearly as possible, without exaggerating or belittling any feature of the situation.

The question of treating the cases in their own homes is an ever-present one, and in many cases must be considered seriously. In the finer houses this can frequently be done with some degree of satisfaction. There will, of course, be a larger amount of furniture, hangings, carpets, etc., to disinfect subsequently, and there are liable to be more people exposed to infection; but, on the other hand, the people are more apt to follow directions intelligently and not to try wilfully to deceive the authorities. A special room is more easily devoted to the purpose and special nurses can more readily be obtained. In the poorer class of houses it is often difficult to obtain complete isolation or care and frequently less intelligent nursing will be obtained. In the case of tenement houses, the treatment at the home should not for a moment be considered. As a general rule, it may be stated that the treatment of smallpox in a private house is at best but a makeshift.

As soon as the authorities are informed of a suspicious case, it should be isolated completely for a few days, until further development of the symptoms render diagnosis certain. During this time no one but the physician in charge and the nurse should, under any circumstances, be allowed to enter the room, for, although the chances of infection at this stage are comparatively slight, still there is always a possibility of transmitting the disease, and the additional risk of permitting visitors in the sick-room is not justified. All articles which the patient uses, such as knives, forks, dishes, etc., should be well boiled before being used by anyone else.

If, in the course of a day or so, the characteristic symptoms and eruptions appear, making the diagnosis certain, the patient should be removed immediately to a hospital devoted to the care of such cases. All persons who have been exposed to the patient should be immediately vaccinated and kept under surveillance for a period of fifteen days from the last possible chance of their having been infected. The room and all its furniture should be disinfected, as mentioned later. No pains should be spared to determine the source from which the disease was contracted, as, by so doing, we may frequently be able to find a large number of persons who may have been subsequently exposed to the same source of danger, and who, therefore, should also be vaccinated and watched by the health authorities.

In some places, for financial reasons, it has been the custom to allow all persons known to have been exposed, to go about absolutely unhindered during a period of incubation pending the development of further symptoms. First obtaining, however, a promise from such persons to report to the authorities in case any symptom of the disease manifests itself. We can not condemn this method too severely, for it can not be applied to all cases, for the reason that, unfortunately, many people will use the time thus gained to make good their escape from the community, or, if they develop a mild case, will occasionally fail to report it until the disease is well developed and many more people have been exposed. It is true that if proper precautions are taken to disinfect the clothes and persons of the ones suspected, comparatively little danger will be produced by this system, providing that we have the intelligent and conscientious assistance of the persons exposed. As this is not possible, however, we can not make special laws or regulations for certain individuals during an epidemic without creating too great an opposition from public sentiment, particularly from those quarters from which we naturally expect and invariably find the greatest opposition to any sanitary regulations.

In large cities it is generally an easy matter to obtain a large building for the organization of a pest-house, and this can usually be done very satisfactorily. In the less densely populated locality, however, tents offer the most convenient and efficient means of isolation. They are cheap, easily procured, can be erected immediately, and, from the standpoint of the patient, are probably more wholesome than buildings. If possible, two large tents and two or three smaller ones should be obtained. The two large ones can be utilized respectively for male and female patients. One of the smaller ones as a kitchen and commissary department, another for the physician in charge and his assistants, in which may also be kept the medical stores and, if possible, above all things, a telephone. The tents should be floored with matched boards or sawdust to a depth of one or two inches, should be provided with good flies, and be well ditched. If possible, they should be upon high, sandy ground and not within 300 yards of other residences. If the weather be cold, they can be easily heated by small stoves placed near the center of the tent, and we have found that the small wood-burning stoves give better satisfaction and can be tended with less trouble than the larger coal stoves. Cots can be obtained cheaply, and straw mattresses easily improvised. Two sets of bedclothes will usually be found sufficient and should be boiled and changed alternately every two days. The cooking can be done in one tent and brought and deposited on a table just outside of the hospital tent, from which place the nurses can carry it to the patients. All unused remnants from the plates should be thrown into the fire, and the dishes, etc., dropped into boiling water by the nurses before being handled by the cook. In this disease, as in many others, much depends upon the nursing, and it is a poor economy which seeks to save unduly in this respect. Night and day nurses are indispensable where there are many or severe cases.

Where there are quite a number of cases to handle a horse and wagon is almost a requisite. Arrangements should be made with the merchants of a town to furnish all necessary articles. These can be ordered by telephone and delivered to the edge of the quarantined line, where they are called for by a guard or a wagon and carried to headquarters. In this way, there is no exposure of the deliverer in handling supplies, and no time is lost in receiving them. Strict account of all articles ordered should be kept by the physician in charge and handed in with his report.

As soon as the patient leaves his house, whether recovered or removed to a hospital, the premises and all articles, which have in any way come in contact with him, should be disinfected. Everything possible should be burned. The carpets may be removed and disinfected, where possible, by being ripped into the original strips and placed in the steam autoclaves, or, where these are not available, may be thoroughly sprinkled with formalin. For articles of clothing or finer articles, such as draperies or curtains, a tight, wooden box may be improvised, into which they may be placed and liberally sprinkled with formalin. Other articles, as sheets and pillow-slips, should be boiled and the contents of the pillows and mattresses, in case they can not be burned, should be exposed to the air of the room during subsequent fumigation.

All wooden articles, the floor, walls and ceilings should be thoroughly sponged with a 1 to 1000 solution of bichlorid of mercury. In the houses which are tightly built, formalin may give good results, but in our work in Tennessee, we have not been satisfied with any of the forms of formaldehyde generators which we have tried. This possibly can be accounted for by the fact that most of the houses in which the disease has been present have been of the poorer class of negro hovels. It is impossible to render these even approximately air-tight. In these cases, we have found that sulphur has given the best results, and have used relatively large quantities of it, burning several piles of ten pounds each in a room at the same time, in order to liberate as large a volume as possible of sulphur dioxid at a time, care being taken to make the room as tight as possible. Near the hospital tents, pits are dug and filled with quicklime, for receiving all discharges and waste material, and the discharges are mixed with an equal volume of a saturated solution of ordinary chlorid of lime and allowed to stand a half hour before being thrown out.

When a patient is ready to leave the hospital, he is made to thoroughly bathe himself and shampoo his hair. He resumes his clothing, which has been sterilized thoroughly. A large dry-goods box may be rendered air-tight by coating the inside with a mixture of equal parts of resin and paraffin, which is melted and poured into all cracks and crevices.

The clothes may be placed in this and sufficient formalin added to moisten them, when the lid will be closed, and they are allowed to remain for twenty-four hours. This has always proved satisfactory in our work and does the clothes no injury.

When the epidemic is terminated all the cots and bedding, together with the tent-floors, should be burned, and the tents themselves thoroughly saturated with a 1 to 1000 solution of bichlorid of mercury. The ground under and around the tents can be sprinkled with a saturated solution of chlorid of lime. When the tents have dried and been allowed to air for a day or two they should be taken down and stored away for future use, without fear of carrying any infection; the ropes must be burned.

At present there are practically two methods of vaccination in use, that with a dry point, and with the glycerinated lymph. The latter is unquestionably the best, but, unfortunately, has its drawbacks. Elgin has shown that in the dry points the pus-producing bacteria will live long after the virus of vaccinia has lost its potency, so that we not infrequently will find, as a result of vaccination with old points, septic arms, which, while they may be extremely sore, have absolutely no protective value. On the other hand, the glycerinated lymph in a short while becomes comparatively sterile as far as pyogenic organisms are concerned, but the virus loses none of its potency.

One of the main objections to the glycerinated lymph is, that it requires a long time to dry, and, that being somewhat viscid, it tends to cause foreign substances to adhere while it is exposed to the air. In this way we have a constant liability to infection at the time of inoculation. In order to obviate this I have introduced into Tennessee this year on a large scale, the hypodermic needle as a means of introducing the vaccine beneath the skin. I have not had an opportunity to search the literature of the subject to see whether this method has been used by other workers in the field. The writer first employed this method in Philadelphia in 1895, at which time he used an aqueous solution from the dry points. Later, however, when the glycerinated lymph came more into vogue, that was substituted for the aqueous solution, with the result of an almost perfect method of vaccination.

In order to use this method a solid-piston hypodermic needle is used, and, if a large number of vaccinations are to be performed, the barrel of the needle may be filled with the glycerinated lymph, which may be obtained in large tubes, containing sufficient of the lymph for fifty cases. A short and rather large caliber needle is most satisfactory. The skin is cleansed in the usual way and a drop of the lymph injected, with the concave surface of the needle downward. In this way the drop of lymph is forced between the epithelial cells and diffuses in exactly the locality desired. As a rule, a single minim is sufficient, although we have injected upward of ten minims without deleterious results. Another advantage of this method is, that in cases of compulsory vaccination the virus can not be removed by washing, as is frequently done when the ordinary point is used. Again, in the South, where we have a large colored population, there exists among them a universal superstition which leads them to expectorate into the vaccination, with the almost constant result of a septic sore. This not only is undesirable for the patient, but is also a menace to the safety of the community, because this septic sore is not protected, while believed to be so, and the result is a feeling of false security. It also offers a pseudo-argument for a class of anti-vaccinationists and individuals, who, from one motive or another, are but too glad to deny the existence of the disease, or who, through a process of vicious reasoning, try to assert that any disease which presents itself upon a vaccinated individual can not be variola. Then again, there is an absolute freedom from danger days after. If it does not "take," there will be no further inconvenience whatever, as no immediate dressing is necessary. The process is entirely painless, a point which will not be lost sight of in the case of a child or nervous patient, to whom the repeated scratching necessary in scarifying is generally extremely irritating. The great rapidity with which the process can be carried out is of great value where large numbers must be immunized in a short time.

A materially larger percentage of successful results will be obtained in this way than by simple scarifying, and we have repeatedly had cases develop a typical, clean vaccination, which had proved refractory to several previous vaccinations with points.

We also believe that by repeated vaccinations by this method, and by slightly increasing the amount injected, that a higher grade of immunity can be produced than where the point is used. The writer has immunized himself in this way and performed some dozens of autopsies with bare hands upon smallpox cadavers, without any further inconvenience than a slight septic infection of two fingers on the left hand. It can not be said that the same immunity might not have been produced by vaccination with the point, but reasoning from the analogy of other immunizations, we should be able, by using and getting absorption of a larger amount of the virus, to develop a higher resistance to the disease.

Where it is possible to handle the work in any other way, extensive quarantines should not be executed, and where they are, it is most usually an evidence of inefficiency of the local boards, which should have charge of the outbreak. When, however, a quarantine is decided

upon as a necessary step, it should consist of at least two separate areas. One to be used by the sick, the other as a camp of detention, in which suspected or exposed cases may sojourn until the presence or absence of the disease can be determined, then their case can be dealt with accordingly.

In the case of large establishments or mines, it often becomes a very serious question in the minds of the authorities as to the wisest course to pursue. If the case has been recognized early and but few of the employes have been exposed, it is manifestly unjust to require the closing of the entire establishment. But, on the other hand, if precautions are not taken there may result a very serious outbreak of the disease. In these cases, if the co-operation of the managers can be obtained, a universal compulsory vaccination, and directions that foremen keep close watch upon all employes for any evidences of sickness, and that any employe who may not be well be returned home until entirely recovered, will generally prevent danger of a severe outbreak. But if, as unfortunately is sometimes the case, the management evinces an inclination to deceive the authorities, the whole institution should be uncompromisingly closed for a period of fifteen days. By that time any which were infected at the time will have developed.

In a mine, where the working population is of a floating class, a compulsory vaccination, with the issuing of individual certificates bearing the name and description of the holder, should be instituted and the foremen instructed to see that each man under his direction be provided with such certificate before being allowed to work. This will usually be sufficient, but we have found in some cases that it was further necessary to send inspectors occasionally through the plant to see that each individual had with him his certificate.

Again, as unscrupulous physicians have been encountered who have issued spurious certificates of vaccination over their own signatures, or who have wilfully made sterile scarifications to simulate vaccination, it may at times be wisest for the physician in charge to recognize or accept absolutely no certificate but his own or that of his assistants, thereby avoiding all personal discrimination, and, by revaccinating all doubtful cases, be positive of having discharged his duty to the best of his ability.

THE DIAGNOSIS OF MILD AND IRREGULAR SMALLPOX AS FOUND IN THE PRESENT OUTBREAK IN THE UNITED STATES.*

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In this paper I will mention and describe only the cases of smallpox which have come under my personal observation during the past two years. Previous to 1899 Chicago had been practically free from smallpox for more than a year, having had but one case in 1898. From March 9, 1899, to the present time—about 27 months—310 cases of smallpox have been found in Chicago. Sixty-four of these in various stages of the disease were imported into the city from nineteen of the surrounding states. The cases came from as far east as New York and as far west as California. In the meantime, I visited three of the neighboring states where the diagnosis of this disease, variously called impetigo contagiosa, giant chicken-pox, Cuban itch, or some other indefinite name, was in dispute. With this opportunity of observing cases imported from such widespread and various sources, I think it is fair to assume that the disease we call smallpox in Chicago is the same disease which has been the subject of controversy in all parts of the United States.

On February 15, 1899, a colored man and wife, named Edmonson, arrived in Chicago from Cincinnati, sick with smallpox in a mild form. A physician was called, who promptly made a diagnosis of chicken-pox and treated them for that disease. Several cases of smallpox resulted from this mistake in diagnosis. This was the beginning of periodic importations of smallpox to Chicago from neighboring cities and states, which have continued up to the present time.

From the date of the discovery of this first case, March 9, 1899, to August 16, 1900—17 months—we had 72 cases of smallpox, 25 of which were direct importations. From this last date, August 16, 1900, to November 30, a period of three and a half months, we were entirely free from the disease. This marked the end of the first influx of the much-discussed disease. On November 30, 1900, Charles L., in the pustular stage of smallpox, came to Chicago from Ashland, Wis., over the C. & N.-W. Ry. He walked into the City Hall, mingled with the crowds in the halls and elevators, visited various departments of public service and finally came to the Department of Health, where he was safely cared for. The day before this man arrived the Health Department had issued a warning to the public to vaccinate and revaccinate, as smallpox was to be found in all of the surrounding states. This case from Ashland was the beginning of a succession of importations and exposures which during the last six months have given us 238 cases of smallpox, 39 of which came from without the city. These two outbreaks of smallpox, with but three months intervening, gave us an opportunity to study 310 cases in the Chicago Isolation Hospital. Numerous forms of the disease were found. The typical case was always present, but the greatest number were deviations from this type. These deviations represented such a variety of forms that almost every case had something peculiar to itself, but the following classifications which I have made will aid in giving an intelligent description of the various forms:

1 Hemorrhagic case, resulting in death.
13 Confluent, with 3 deaths.
24 Semi-confluent, with 2 deaths.
54 Severe discrete cases, with no deaths.
179 Mild discrete cases, with no deaths.
39 Modified form—cases in which there was evidence of a more or less successful vaccination, with no deaths.

In this outbreak I have seen no cases of smallpox without eruption. I am satisfied this form—variola sine eruptione—exists. In the epidemic in Chicago of 1894-5, I carefully observed and studied thirty cases of this form. The evidence was conclusive to me that such cases exist. All the cases I saw of this form were in adults with old vaccination marks.

I have seen no cases with the initial rash in this present outbreak, though one man stated he had a rash over the body the second day of the disease, which disappeared the following day.

* Read in Symposium on Smallpox, in the Section on Practice of Medicine, at the Fifty-second Annual Meeting of the American Medical Association, held at St. Paul, Minn., June 4-7, 1901.

The hemorrhagic case had no unusual features. It was not a typical case of purpura variolosa, as vesicles formed on the face and hands, though not elsewhere, before the hemorrhages took place. After severe prodromal symptoms with high fever for three and a half days, a diffuse redness with thickly studded spots that seemed to be slightly infiltrated appeared on the hands, wrists and face. As this change in the skin appeared, the temperature dropped to normal and the headache, backache and nausea had ceased. This attempt at a variolus eruption went no further except on the hands and face, where small, flat, imperfect, confluent vesicles could be discerned. The skin became dark-red or copper-colored with general diffused inflammatory swelling; petechial spots appeared in the skin, and hemorrhages from the mucous membranes became constant. Deep-seated hemorrhages under the skin could be seen, dark-blue and bulging, giving the appearance of a bullet buried beneath the integument. The man died on the sixth day of the disease.

The typical confluent form is well described in numerous books, but as it is necessary to keep in mind the typical case as a basis from which to study all cases deviating from this type, I will briefly mention the essential symptoms. All cases, no matter how mild, will, in a more or less modified, imperfect way, follow the symptoms and clinical course of the typical case.

The typical case has a chill or a chilly feeling—a child often has a convulsion—followed by fever, sometimes high and sometimes not severe, nausea, pain in epigastrium, backache, headache usually frontal, dizziness, sweating during the initial febrile stage; the eruption appears the evening of the third or the morning of the fourth day, and as this eruption appears, the fever and all painful and distressing symptoms subside. The patient at this stage, if not prevented, will get up and walk about. The eruption, which is macular for a few hours, becomes papular, has a thick covering within the skin, which gives it the appearance of small shot forced up from below the skin, bringing with it this tissue as a covering. It feels like shot beneath the skin, if you care to feel of it. As a matter of fact, the papillary layer of the skin is not a part of the covering, but is involved in the inflammatory process. For diagnostic purposes, I think the most valuable distinguishing feature about smallpox is the fact that the papule develops next to the *cutis vera* and by extension downward always involves the true skin. This eruption first appears on the most vascular parts—forehead, nose, lips, throat, hands, wrists and penis. These papules at once begin to form into vesicles, and generally in 36 hours they appear to the eye as small vesicles, usually but not always depressed in the center.

About the fifth day the vesicle, with its thick, tenacious covering unbroken, and all the time enlarging, begins to appear opaque. It is the color of a pearl and is entering the pustular stage. The face is swollen and the eyes partly closed. At this stage, or a day or two later, the secondary fever begins. The pustules, with their thick investment which resists natural decay and accidental pressure, continue to fill and grow till the 11th or 12th day, when they begin to dry and by the 18th day of the eruption the pustules will have dried and dropped off, leaving large pigmented spots, and if the inflammation has been severe enough to destroy the skin, pitting will occur.

Besides the 13 confluent cases, we had two that were abortive confluent, which were very interesting. The cases had all the classical symptoms of smallpox up to the 6th day of the eruption in one case, and the 5th day in the other. Both were pustular, and secondary fever was present. They were very sick and in one case I predicted a fatal termination. At this stage of the disease the fever disappeared and the pustules which were undersize for the 5th and 6th days, stopped filling, rapidly dried and had scaled off in the next five or six days. These patients, who were in a serious condition on the 5th and 6th days, were walking about the ward three days later. When desquamation was completed, at the site of the pustules there was infiltrated, inflammatory thickening of the skin. These were aborted cases known as hornpox (variola cornea), but I have described them here because they were confluent and the subjects had never been vaccinated.

The semi-confluent form, 24 in number, followed closely the symptoms and course of the typical case and needs no separate description.

The severe discrete form numbered 54. These followed closely the symptoms and course of the typical case. Under this form I have classed several cases which have been designated by the various writers as variola corymbosa. These are cases having thickly studded patches or clusters of pustules resembling herpes zoster. These patches are usually more advanced in the course of development than the lesions on the other parts of the same subject. There is nothing puzzling about a case of this kind, and to avoid mistakes it is only necessary to know that such cases are occasionally to be seen. A severe irritation of the skin in a smallpox patient will produce a cluster of lesions the size of the surface so irritated. A mustard plaster will have a similar effect. In one case a confluent patch as large as a hand appeared on a man's leg above the knee as the result of friction of a shovel handle which the man was using while in the prodromal stage of smallpox. One patient had clusters of thickly-studded pustules following the intercostal nerves on both sides of the spinal column. It resembled a double herpes zoster. Two reputable physicians, both familiar with smallpox, pronounced this herpes zoster, but after observing the case for several days, changed their diagnosis and reported it to the health department. The man had all the clinical symptoms of smallpox, with a discrete, general eruption in addition to the clusters on the back.

The mild discrete form, 177 in number, presented a great variety of deviations from the typical case. It is astonishing that there should be 177 mild, discrete cases in unvaccinated subjects out of a total of 310 cases of smallpox. None of these had ever been vaccinated, yet the disease was so mild that nearly all of them would have been wandering about the city or attending to business if some one had not stopped them. In these mild cases numerous deceptive aspects are presented. In a majority of the cases the eruption will appear after two days of prodromal symptoms instead of the evening of the third or the morning of the fourth day, as is usual. In some instances there were violent prodromal symptoms, chills, high fever, headache, backache and profuse sweating, followed by so insignificantly few eruptions as to be misleading to a physician who is inexperienced in the diagnosis of smallpox and somewhat surprising to the experienced doctor. More often the prodromal symptoms are very irregular and insignificant, as well as the eruption. There was sometimes absence of headache, and frequently the backache was wanting. Nausea was a pretty constant symptom in all

mild cases. Except the fever, I think it was the most constant symptom. Close inquiry brought out the fact that there was always some fever. The presence of the chill or chilly feeling was frequently denied. The symptoms were so mild in most cases as not to stop the subject from his work. The patient always felt better as soon as the eruption appeared, no matter how mild the symptom. If he had stopped work for a couple of days because of indisposition, he would return to work in most instances when the eruption on the skin appeared. I have found men in this form of smallpox in the pustular stage of the disease, working in printing houses, packing houses and factories. They felt no inconvenience and were not aware of the nature and danger to others of the disease with which they were afflicted.

The secondary fever in these mild cases was rarely present. In the mild discrete form were found numerous abortive cases. In these cases most of the vesicles were conoid, though a few usually would show umbilication. There was frequently an appearance of a difference in the age of the vesicle, some twenty-four to forty-eight hours in advance of others. These cases resembled modified smallpox. In three or four days the vesicles became dried pustules, and in eight or ten days desquamation was complete. The form known as wartpox (variola verrucosa) was occasionally seen. In these cases no vesicle was formed. The lesions remained papular; they enlarge by inflammatory infiltration, gradually dry up and scale off irregularly and imperfectly.

One of the cases remained in the hospital sixty days before he was through scaling. Another form, known as hornpox (variola cornea), was more frequently seen than this form. In hornpox the vesicle forms, but before it becomes pustular the contents of the vesicle are rapidly absorbed; a scab forms and scaling begins as early as the sixth day and is completed before the tenth day, or a couple of days later, if it is a confluent case. Some of the imperfectly filled vesicles dry up and have the color and appearance of pustules, but if cut into the contents are found to be dried, hardened and horny. In these cases no secondary fever is present, except for a day or two in the confluent abortive cases. The inflammation is not severe enough to destroy the skin and leave marks. When the vesicles dry up and fall off there is left a red nodule slightly elevated above the surface of the skin. This is an inflammatory infiltration, which is absorbed in a couple of months, leaving no scar. In some of these very mild cases, part of the vesicles were quite superficial, resembling chicken-pox in structure, but a careful examination always resulted in finding some deep-seated characteristic lesions with thick investment, which is the great distinguishing feature between chicken-pox and smallpox.

The modified form, 39 in number, represents cases in which the subject has some evidence of a successful vaccination, though none of more recent date than sixteen years. These 39 cases were all that entered the hospital with any signs of vaccination.

Right here I wish to say that the term "varioloid," meaning like smallpox, should no longer be used. The writers do not agree as to what to include under that name, some calling all mild cases of smallpox varioloid, while others include in the term only such cases as are modified by vaccination. Frequently I have had to spend valuable time in explaining the identity of varioloid and variola to people afflicted with the former, and sometimes had considerable difficulty in inducing them to be sent to the Isolation Hospital, because their physician had told them the disease was varioloid, but had failed to explain to them that the term means mild smallpox. Many have the impression that varioloid is not smallpox, and think if they are taken to the Isolation Hospital while sick with the former disease they are liable to contract the latter. In other instances, people who were told they had varioloid took no precautions to prevent the exposure of others, because they thought varioloid less contagious than smallpox. The term is a useless one and confuses the laity. Smallpox is smallpox, mild or severe, and should be called by that name, or its equivalent, variola.

Under the modified form we had one confluent abortive case. This case was identically the same in every symptom and feature as the two abortive confluent cases described under the confluent form, and has been placed here only because he had an old, imperfect scar, said to be from vaccination. The scar was forty-five years old. Another irregular case was one of abnormal distribution. The man afflicted was 39 years old and said he was vaccinated when a child. The scar was imperfect and doubtful. The patient had the usual prodromal symptoms up to the third day, when the eruption made its appearance and the fever subsided. The eruption appeared confluent on the face and semi-confluent on the arms. No sign of any eruption appeared elsewhere on this patient. The case ran a typical course with secondary fever and recovered. I think both of the above cases were unmodified smallpox, but the presence of the old scar said to be from vaccination compels me to place them here as of the modified form. One subject, vaccinated thirty years previous, had the form of smallpox mentioned by the elder Flint as variola variceloides. Smallpox was present in this case, but there was also present on the first day of the eruption large, round, well-developed vesicles identical with those found in chicken-pox. The vesicles disappeared in forty-eight hours and the smallpox ran a short course without secondary fever. I saw a similar case in the epidemic of 1894-95. Nearly all these modified cases ran their course and scaled off in from six to ten days without secondary fever. In this modified form we frequently found a condition which is generally recognized to be characteristic of chicken-pox and not present in smallpox, viz., as many as three stages of development of the lesions side by side. A few papules, numerous vesicles, some pustules, and even scabs, are found at the same time. These cases run their course and desquamate in six to eight days. In all these mild cases there will be some prodromal symptoms, with cessation of fever when the eruption shows, and though many of the vesicles may be quite thinly covered, some of the lesions will be deep-seated, invading all the layers of the skin.

The vaccinal status of these 310 cases was as follows: Five had typical old scars. The most recently vaccinated was sixteen years previous to the attack. This was a patient 40 years old whose statement may be doubted. The date of vaccination of the others ranged from twenty to fifty years previous to the attack. Nine had fair old scars, twenty-five had old, imperfect, doubtful scars. Two hundred and seventy-one never had been successfully vaccinated. All patients were carefully examined by three experienced physicians for evidences of vaccination and the record here given can be relied upon as correct.

An absolute diagnosis of smallpox can not be made before the eruptive stage, except in the hemorrhagic form. In all these mild cases there was a general conformity to the history and course of the typical case of smallpox. There was always the prodromal symptom with the subsidence of fever when the eruption appeared. But we have to remember that chicken-pox is sometimes preceded by prodromal symptoms and that chicken-pox attacks adults and that the prodromal symptoms in smallpox are sometimes irregular and slight, so that we are compelled in some cases to make the diagnosis on the character of the eruption alone, as presented to the eye. The diagnosis can be made, for there is a difference in the appearance to the eye and the clinical course of the development of the skin lesion. The smallpox lesion has a deeper origin than chicken-pox. The papule rests on the cutis vera and by inflammatory extension this tissue is implicated. Not all of the lesions are so deep-seated, but I was always able to find some of the vesicles with thick, tenacious investment which keeps the vesicle and pustule intact longer than is the case in chicken-pox. Chicken-pox lesions have only the outer layer of the skin for a covering. This covering is fragile, easily broken and is broken from the first to the third day of its growth. The vesicles or pustules of chicken-pox, no matter how robust, will not resist accidental violence or natural decay more than four days, except on the hands and wrists of an adult negro, where the covering of the pustule is so thick as to resemble or merge into the life history of smallpox lesions. The external layer of skin in an adult negro is thick, and the eruption of varicella here looks and feels like the papule of variola, but an examination of the lesion on other parts of the body will aid in determining the nature of the disease. Measles is a papular disease, and the first day of the eruption is often mistaken for variola. Such a mistake should not be made. In measles the fever is highest on the day of the eruption, while in smallpox this is a time when the temperature drops to the normal usually.

In making a diagnosis of variola, remember there are some prodromal symptoms in the mildest cases, if you are successful in getting the truth out of the patient; that when the eruption appears the patient will always feel better, unless there is present some intercurrent disease, and that the fever will subside as the eruption appears. Look for the early appearance of the eruption on the vascular parts, on the face, in the throat, on the wrists and hands, on the foreskin and glans penis. If you find a papule on the ears it will help in the diagnosis. Do not depend too much on finding umbilications of the vesicles; you will be disappointed in the mild cases, as it is often absent.

Of the 310 cases treated in the Chicago Isolation Hospital, but six died. It is this low death-rate in this epidemic that has led the laity and the inexperienced physician to doubt the diagnosis. To convince the inexperienced, the typical case must be constantly in evidence.

Why there should be so few serious or fatal cases in this outbreak I do not know, and I am equally ignorant as to why the epidemic of scarlet fever prevalent at the same time in Chicago has been so mild. Our knowledge does not reach far enough to say why one epidemic is severe and another mild in any of the epidemic diseases. These mild forms of smallpox are always present in all epidemics of this disease and have been recognized and written about from the time of Rhazas down to the present. In Chicago and elsewhere I have had no difficulty in making a diagnosis of smallpox. Occasionally chicken-pox was encountered, but I never met any disease not well known and described. The occasional occurrence of chicken-pox in adults always has been a source of confusion to medical men who are not in constant touch with variola and varicella and have not become perfectly familiar with the clinical aspects of the two diseases in all their forms. An unrecognized case of chicken-pox in an adult may account for some of the reported successful vaccinations in a subject recovering from smallpox. Dr. Rawlings, of the Isolation Hospital, vaccinated more than 100 who had recovered from the mildest form of this debatable disease, and in no instance did he get a successful result, though they had never been previously vaccinated. In Chicago we placed all patients with smallpox—hemorrhagic, confluent, and cases so mild that they would be at work if not prevented—in the same wards in the hospital. Of these, 271 never were vaccinated. None of these afflicted with the mild form of the disease contracted smallpox from the severe typical cases, of which variety we always had a few in the wards, making exposure prolonged and certain. If these mild cases in unvaccinated subjects had not been smallpox, with this prolonged exposure numerous cases of smallpox would have resulted. Another fact to be remembered is that these irregular mild cases have conveyed typical confluent smallpox to other members of the family. One of the wandering variety, singing in concerts in various towns, had her case diagnosed as chicken-pox by several physicians in two states, yet she conveyed the disease to four members of her family, one of whom died of confluent smallpox in its most hideous form. This mild form of the disease gives immunity from smallpox and will transmit typical, confluent, or hemorrhagic smallpox. Of this we have had abundant proof in Chicago. Further, the disease follows the rule of smallpox in attacking exclusively those not protected by vaccination.

THE DISTINGUISHING CHARACTERISTICS BETWEEN MILD DISCRETE SMALLPOX AND CHICKEN-POX.*

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There are probably no other diseases, surely no other contagious diseases, so commonly mistaken one for the other as is the case in smallpox and chicken-pox. The error is seldom made of calling chicken-pox anything else than what it is, while some physicians are loth to acknowledge smallpox by its right name. They prefer instead to call it pustular syphilis, acne, bromism, chicken-pox; they go out of their way, seemingly, for names like Cuban itch, Philippino rash, yaw, etc. It is quite remarkable how persistent we have been that smallpox must be something else. It would look as though the profession had fairly forgotten about the discrete form of this disease. Physicians, as well as laymen, may have pictured in their minds the repulsive confluent or hemorrhagic variety to the exclusion of the milder kind.

Discrete smallpox is sometimes so extremely light, that medical men who have formed their conceptions of the disease from descriptive lectures and pictures,

* Read in Symposium on Smallpox, in the Section on Practice of Medicine, at the Fifty-second Annual Meeting of the American Medical Association, held at St. Paul, Minn., June 4-7, 1901.

do not understand how so simple an ailment can possibly be smallpox, and, rather than create a panic by naming it variola, they are often persuaded to call it by some milder term.

From all sections come reports of the benign character of the present epidemic of the disease, several hundred cases without a death being known. Take the whole country over, the mortality will not exceed an average of 2 per cent. Such a favorable prognosis can hardly be made in any of the other eruptive fevers, excepting, perhaps, the single one of chicken-pox. In fact, many of the cases are little, if any, worse than vaccination. If it were not for the fact that now and then a patient has the severe confluent form with consequent pitting, or dies with variola hemorrhagica, I, for one, would advocate letting the contagion run its course.

To one familiar with both diseases there seems almost no similarity, no matter how mild may be the smallpox or how severe the chicken-pox. Personal observation of many hundred cases of both diseases has emphasized the distinguishing differences as stated in our text-books. I shall not attempt anything more than a reiteration of what has already been said by some of our most trustworthy writers.

There have been no new diagnostic signs advanced, as far as I know, except the diazo-reaction of the urine, which is of relative value only, since it may occur in several other pathologic conditions. It is stated to be present in more than 90 per cent. of smallpox and absent in chicken-pox.

In the first place, a varicella is distinctly a disease of childhood. Nevertheless, like all other generalities, there are exceptions to the rule. We have all seen grown people with chicken-pox. With variola there is no age that escapes. The infant at the breast may take the disease from its grandparent, and vice versa. In one household I found the grandfather, grandmother, father and baby all sick with smallpox. The only one to escape was the mother, she alone having been vaccinated. It is stated that adults do not have chicken-pox oftener because they may have had it in infancy. Few are able to tell whether they have or not had the disease. On the other hand, smallpox is not so easily forgotten. Some one is likely to know, even though the patient himself has no marks to prove it.

The rule is almost absolute that smallpox attacks the exposed parts of the body, or more correctly speaking, the extremities, that is, the face, wrists, feet and ankles. Chicken-pox appears invariably on the covered or middle portions, like the thorax. The germ—doubtless the etiological factor in both ailments—of smallpox prefer those thicker portions of the cuticle, while the milder and less venturesome microbe of chicken-pox lays claim to the tender pasture-lands of the chest. At any rate one rarely sees a case of variola that the eruption is not threefold as profuse on the face and hands as on the thorax. Of varicella the reverse is quite as true. In determining the former I would examine the hands, in the latter the back. I have never found the eruption of chicken-pox on the palms of the hands or on the soles of the feet that had the characteristic shotty feel of smallpox, and, indeed, only once have I found any eruption of chicken-pox on these surfaces at all, and then only a few delicate vesicles on the ball of one foot.

The eruption in smallpox undergoes definite progressive changes. First papules, then vesicles, and finally pustules. In chicken-pox we seldom see anything but vesicles, some few of which become slightly pustular. In the transition from vesicles to pustules we commonly find umbilication, more particularly about the face and neck. The smallpox vesicle becomes depressed at its summit when ruptured, but in chicken-pox it will collapse. Later the injured vesicle in one case will round up with pus, while in the milder disease it begins at once to desquamate and will disappear in a few days. The eruption in variola is multilocular and in varicella unilocular. One is a deeper inflammation than the other and forces its way up through the lower layers of the skin, while the whole process in chicken-pox is superficial and does not extend deeper than the horny layer. One is spoken of as "shotty" to the touch, while the other is "velvety." The eruption of smallpox is so firm and hard that at no stage is it easy to break down the lesion by pressure with the finger. A child with chicken-pox, however, will rupture the vesicles simply by moving about in the bed. Another distinguishing characteristic of the two eruptions is, that in smallpox there is uniformity, one pustule looking almost exactly like its neighbor. In chicken-pox there is marked dissimilarity and irregularity in their size and development. Then, too, the manner of erupting is somewhat different. In smallpox the crop is ripened at the same time, usually reaching its height in seven or eight days. In chicken-pox the vesicles that appear to-day are collapsed to-morrow and new ones may spring up in their stead. Altogether the process is seldom longer than three days reaching the stage of desquamation.

More marked than all, perhaps, are the clinical differences. Smallpox, even in the mildest form, has a pronounced prodroma. The invasion is so severe that the victims of the disease rarely fail to mention how badly they felt for a few days before breaking out. Headache, backache, high fever (104 to 105 F.), frequently accompanied with chill and vomiting, are typical symptoms. The temperature even in severe cases of variola drops as soon as the eruption appears. The other affection occasions discomfort and fever progressively proportionate to the severity of the attack—the worse one looks the worse he feels. It is a continuous fever, resolution taking place by lysis. The fever of smallpox is always intermittent. Upon the first appearance of papules the temperature returns quickly to normal, the subject of the disease seems well, and, though he may take on the contour of a nutmeg-grater, there is slight discomfort for several days, or until the beginning of pustulation. Even then it amounts to little or nothing in the mild discrete form of the disease.

No one, be he physician or layman, will look on even a moderately severe case of smallpox and call it chicken-pox. The whole difficulty has been with the mild form; at least 90 per cent. of the cases reported being of this type. Some of those examined by the writer have been so insignificant that quarantine seemed needless. Yet their true nature has been frequently demonstrated by noting the development of other and serious forms of the disease from exposure to these apparently harmless cases.

SUMMARY.

SMALLPOX.	CHICKEN-POX.
Any age.	Childhood.
Incubation, 2 weeks.	Incubation, 13 to 17 days.
Headache, backache, fever, gen. malaise; lasting 3 or 4 days.	No prodroma, or at most only slight indisposition
Worst on the exposed parts—extremities; invariably on the palms.	Worst on the covered portions—thorax; rarely or never seen on the palms or soles.

SMALLPOX.	CHICKEN-POX.
Progressive eruption: papules, vesicles, pustules, crusts.	Vesicles and crusts.
Lesion includes the lower layers of the derma. Hard to rupture. Multilocular.	Lesion very superficial. Easy to rupture. Unilocular.
Temperature high (103-105) till eruption appears. Then drops and does not rise again for a week, and not then in the milder discrete forms.	Rises with the severity of the attack.
Eruptions quite uniform in size; has a reddened area at base; frequently umbilicated.	Not uniform. Also inflamed area about the vesicle, but less marked.
Painful to the touch; may itch.	Not painful to touch.
Lasts 2 to 4 weeks.	Lasts 1 week to 14 days.
Vaccination protects.	Does not protect.
Pits when confluent on face; will occasionally mark in the discrete form.	Seldom unless infected.
Generally no complications.	No complications.
High mortality in the severe confluent and hemorrhagic types.	Nil.
Resolution by crisis.	Resolution by lysis.

VARIOLA.*

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This disease has prevailed so generally throughout the United States since 1897 that time spent in describing it might well be considered wasted. That it has been remarkably mild in type every one who has had any experience knows, but in spite of this fact experts are practically a unit in their diagnosis. I am aware that at Atlantic City a year ago a member of this Association presented a paper, with a title made up largely of interrogation points, in which he attempted to prove that the disease as he had seen it in Tennessee was not variola, but this paper had not a single convincing argument to those who have had an opportunity of studying the disease, that it was anything else than variola.

In spite of the fact that this disease of mild type was epidemic in Kentucky and other Southern States in 1897; was well described by Dr. Wm. M. Welch, of Philadelphia, in 1898; and that one state after another during the past four years has been compelled to fight against the epidemic, we still find individuals who with little if any knowledge beyond that gained from medical books are willing to place their personal opinions against those of experts the country over, and who insist that the experts are wrong in calling it by its right name. These mischief-makers are found in the medical profession as well as among the laity.

Recognizing the fact that it is no longer necessary to discuss with experts the question as to whether this is or is not variola, it is my purpose to present certain topics, that should be of interest, for discussion.

It may be apropos to state that in Minnesota during the past two years there have been 7211 cases of variola reported, with 49 reported deaths. I wish to emphasize the word reported as applied to deaths, for I have positive knowledge that there have been deaths from this disease in this state reported as due to other causes, or not reported at all. Some of these errors have been committed innocently; others intentionally. A similar experience, I have no doubt, has been met with in other states.

It may be well in beginning this paper to ask whether the picture presented by the typical cases in this epidemic conforms with that given for variola in our medical text-books? There can be but one answer: It certainly does. Time after time during the past two years I have seen the classically described discrete, semiconfluent, confluent, and hemorrhagic forms, as also the variola sine eruptione. Can we be governed in our diagnosis of all cases in this present epidemic by the usual text-book descriptions of variola? Most assuredly no. We will in all probability find fairly typical prodromal symptoms, but the rash may vary in degree, in form, in type of progress and in final disappearance in a way that is described in but few text-books.

In Reynold's "System of Medicine" a mild form of variola quite similar to that of our present epidemic is well described. Various writers refer to the fact that an epidemic of varicella frequently accompanies an epidemic of variola. While this is possible, I am rather inclined to think that in the past the mild cases of variola have often been called varicella, and epidemics that have been said to represent two distinct diseases have in fact been only differences in degree of one and the same disease. It must be admitted that too often in the past have only the severely typical cases of various diseases been given their right name, while the mild cases of these diseases have been given some other name. This has been true of typhoid fever, of diphtheria, of variola, and even of scarlatina, in the past, and in each instance the result of such action has been to falsify and make much higher the mortality rates of these diseases.

Dr. Louis Leroy, of Tennessee, in his recent article on smallpox, draws attention to a mild type of variola described as early as 1827 by John Mason Good.[1]

A little reasoning on the part of a fairly intelligent physician should enable him to clear up or correct his doubtful diagnoses in the present epidemic. It often happens that the first cases in any given community are mild in type and in consequence wrongly diagnosed. Later, however, with the appearance of one or more typical cases, the disease should be properly designated, and with the line of infection recognized as one and the same it becomes plain that the first cases though atypical must also have been variola. For example: In a village in Minnesota several cases of an eruptive disease, occurring among school children, were called varicella. However, a typical case of variola presented itself, the patient dying; thereupon the attending physician said, this case being one of variola and the line of infection for this and the so-called varicella cases having been one and the same, our first diagnosis must have been wrong; the cases must all have been variola. His reasoning was good and his conclusions correct. In this village there were in all 64 cases, with 3 deaths.

Occasionally we find physicians who have made a mistake in diagnosis and who persistently hold to their errors. This was notably true in Winona, Minn., last winter, when from first to last there were over 2000 cases of variola with probably 7 or 8 deaths.[2] Several of the Winona physicians still hold to the diagnosis

* Read in Symposium on Smallpox, in the Section on Practice of Medicine, at the Fifty-second Annual Meeting of the American Medical Association, held at St. Paul, Minn., June 4-7, 1901.

1. Study of Medicine, vol. iii, J. & J. Harper, New York, 1827.

2. Winona is one of the places that gave the returns of *no* deaths from smallpox, but I have good reasons to believe that my statement above is correct. In addition to the deaths there were undoubtedly cases of miscarriage due to the disease.

of varicella for their epidemic, in spite of sufficiently strong evidence to the contrary.

Does vaccination protect against this disease? Most assuredly yes. This has been thoroughly demonstrated. For example: Of 662 cases in 244 houses, but ten patients had been successfully vaccinated at any time prior to their infection, and of these ten, 30 years had elapsed since successful vaccination for two of them, over 25 years for four, 20 years for one, and 6 years for one. Only two of these ten were said to have had recent successful vaccination (three months prior) and in both of these the disease was mild. Of these 662 cases there was one who years ago had an attack of variola. In one family seven non-vaccinated individuals had variola; the one vaccinated member escaped. In one family four non-vaccinated members had variola, all the vaccinated escaped. In eight other families the vaccinated members escaped; while in each one of the eight families one, the only non-vaccinated individual, had variola.

In one instance a physician who was at first in doubt regarding the disease before him, wrote me: "One thing is certain, if this is smallpox vaccination does not protect against it." I at once made him a visit, and together we went over his patients, with this result; some had misstated facts to him, and had said they had been successfully vaccinated when the reverse was the case; others had told him of vaccination, but had neglected to state that it had not been successful. It was fully shown that in all successful recent vaccinations the individuals were in each and every instance protected from this disease.

Dr. Ohage informs me that from May 1, 1899, to May 10, 1901, there were in St. Paul 104 cases of variola. But 2 of these cases had been vaccinated—one fifteen, the other twenty years prior to contracting the disease. There was not a single instance in which a properly vaccinated person contracted the disease.

Dr. P. M. Hall, of Minneapolis, informs me that of 191 cases of variola that came under his care between the dates of January 7 and May 8, 1901, but one had any evidence of a previous successful vaccination, and that was in childhood. The patient was about 40 years old.

Regarding the protection furnished by vaccinia against variola, the Chicago Board of Health makes the following statement: "Out of the total 171 cases of smallpox found in Chicago between Nov. 30, 1900, and April 10, 1901, 140 had never been vaccinated. Of the remaining 31 cases, 29 were adults showing faint, poor or irregular scars, claimed to be evidence of attempted vaccination in infancy or childhood—the most recent being 23 years old. Only 2 out of the 171 cases exhibited typical scars of successful vaccination. Of these, one was 35 years old 'vaccinated when a child'; revaccination was attempted three years ago, without result; vaccine lymph was probably inert. The other was 40 years old, also successfully vaccinated in childhood, but never revaccinated. These are the only 2 cases out of the total 171 upon whom vaccination was ever successfully attempted, and the most recent of these was over 30 years ago. Since vaccination was made compulsory in the schools of Chicago, smallpox has disappeared from them. The requirement was first put into effect in 1867, and from that year until 1881 there were only 17 cases all told of smallpox and varioloid in the schools, and these are explained by the health department as due to the imperfect inauguration of the compulsory vaccination system. Since the latter date the disease has entirely disappeared. For twenty years the schools of Chicago have been immune from smallpox cases, for although four cases were reported last winter they were all pupils who had been let in on fraudulent certificates and who had never been vaccinated—a confirmatory proof of the efficacy of vaccination. Another significant fact of the same character is that since vaccination has been universally practiced by the police of Chicago the officers have been free from smallpox. The policemen go everywhere, into all the haunts of crime and disease, and are exceptionally liable to exposure. Yet though several thousand in number they enjoy immunity from the disease."

It may be well at this point to discuss the terms variola, varioloid, vaccinia and vaccinoid, and their relation to each other. There is an indefiniteness in these terms that is annoying. It would seem that there should not be two names for one and the same disease as presented by different degrees of severity, yet this is too often true in the use of these terms. People have such a dread of variola (smallpox), that a milder name is sought for. We thus too often find cases of severe type called by their right name, while the same disease under milder form is misnamed varioloid. This is a faulty, misleading and dangerous procedure. Under the term variola we should include all types of the disease in its unmodified form. Under the term varioloid we should include only those cases of variola which are modified by a previous infection. This, of course, should be recognized as not making of these two conditions two distinct diseases. So, too, of vaccinia and vaccinoid. The first presents to us a disease of typical form; the second a disease of modified form, the result of previous infection.

The nature of "previous infection" giving rise to varioloid or vaccinoid, requires some consideration, and to begin with we are confronted with the question as to the relationship of variola and vaccinia. Probably we are ready to admit that these two are in fact one and the same disease; that a successful and recent variola will prevent an immediate recurrence of this disease, or of an immediate successful unmodified vaccinia; so, too, that a recent successful vaccinia will prevent the immediate recurrence of this disease, as also of an immediate unmodified variola. It is not generally admitted, however, that a recent successful variola may be followed by a modified vaccinia called vaccinoid—quite the reverse. The statement is generally made by leading authorities that evidence of successful vaccination after an eruptive disease would positively exclude the possibility of the disease having been variola. In spite of the general admission of a possible varioloid after a recent successful vaccinia and the general denial of a possible vaccinoid after a recent successful variola, I venture to assert that vaccinoid may be present as the result of vaccination immediately following a successful variola as frequently as varioloid immediately following a successful vaccinia; in other words, that the appearance of a modified vaccinia (vaccinoid) following a recent variola does not disprove the disease diagnosed as variola to have been such. The possibility of having a second attack of variola (or varioloid) or of vaccinia (or vaccinoid) depends entirely upon the duration and degree of immunity conferred by a previous attack of variola or vaccinia. A recent vaccination is, in all probability, more marked in its protective action against variola than is an old variola.

The duration of immunity conferred by either variola or vaccinia depends upon the individual. In either case it may be for life, or for but a few months.

It is no uncommon thing to find those who insist that the present epidemic is not variola, trying to prove their point by following up the disease in a given individual with vaccination. Were such successful in securing vaccinia or vaccinoid, to me, they would not disprove the previous variola, but would rather establish the line of argument that I have just presented tending to show an insufficient immunity following a mild variola.

In passing, it may be well to draw the attention of those who are trying to disprove a variola by a subsequent vaccinia to the fact that there are opportunities of error which they must guard against most carefully. If vaccination is made during the progress of variola an eruption (variolus) will, in all probability, occur at the seat of scarification or irritation. This should not be mistaken for a successful vaccination. Even after the patient has fairly recovered from variola an appearance simulating vaccinia might be produced at the point of irritation. Dr. Pitblado, of Minneapolis, informs me that he has vaccinated a number of smallpox patients while in detention, and has in a number of instances succeeded in producing a rash at the point of scarification. But this rash was plainly that of variola. It is a generally recognized fact that the eruption of variola is apt to be confluent in form at any seat of special irritation, as along the line of a cut or scratch. Undoubtedly a modified variolus eruption at the seat of scarification for vaccination has been mistaken for a successful vaccination by not over careful observers who have shown themselves rather too zealous in their efforts to disprove the existence of variola among their patients. Still further, the eruption of variola and vaccinia may exist at one and the same time in a patient.

It is hardly necessary to refer to those who give an opinion of successful vaccinia when they have nothing upon which to base their opinion but the dry "scab" present as the result of too vigorous scarification. Yet in my own experience this condition has been pronounced a successful vaccinia and used to disprove my diagnosis of variola.

Since the epidemic in Minnesota first appeared, early in 1899, I have been closely watching for these reported "successful vaccinations" after variola, not for the purpose of disputing with those opposed to my diagnosis of variola, but in order to prove the line of reasoning already presented in favor of such possible occurrence. I might, therefore, be considered as one with prejudices favoring my antagonists' line of argument. In all my inquiries I have been able to find but one case that bears out the possibility of an immediate successful vaccination after variola, and this one case had vaccinoid, instead of vaccinia. Its history is as follows:

Early in the outbreak in Minneapolis, when the health officials of that city were denying the existence of the disease, a young woman in due time after exposure had mild prodromal symptoms and a very mild variolus eruption. When she had been released from quarantine she went to a physician and was vaccinated, her purpose being to bring suit against the city for wrongful detention in quarantine should she secure a successful vaccination, she having been informed that this would be absolute proof that she had not had variola. The physician who vaccinated her knew nothing of her intention. He revaccinated himself about this same time and secured the same result in both cases—a condition that would have been called a successful vaccination by some physicians, but which was undoubtedly vaccinoid, in the one case due to a previous variola, in the other due to a previous vaccinia. The young woman was pleased, and announced to her physician her intention to bring suit against the city. He, however, refused to accept the evidences of vaccinoid as sufficient to disprove a recent attack of variola.

The following cases demonstrate the possibility of a successful vaccinia following variola:

CASE 1.—Male, vaccinated about March 1; reported as successful March 16. This party states that he had variola thirteen years ago. Has smallpox scars from the first attack.

CASE 2.—Male, had variola in 1891. At the time was ill three weeks and was in quarantine seven weeks; was successfully vaccinated in March, 1901.

CASE 3.—Mrs. S., said to have had varioloid in 1885, vaccinated successfully in spring of 1900.

CASE 4.—Young woman, whose case has already been referred to in this paper, who was vaccinated immediately after release from quarantine for variola. She had vaccinoid.

CASE 5.—Policeman who had variola twenty years ago, was successfully vaccinated February, 1901.

CASE 6.—Paris case (20th Century, Vol. XIII, page 522). Woman had variola in 1868, at age of 32, and again in 1871; was successfully vaccinated in 1873, and upon six different occasions after this at intervals of six months. She was lost sight of after the sixth vaccination.

Every physician will admit that an individual may have variola more than once; also that there may be an attack of variola at some date following a successful vaccinia. Quite an interesting case of relapsing variola was reported to me March 25 of the present year. A young man had a typical history of variola and was about to be released from quarantine, when he was again taken ill with all the prodromal symptoms of the disease. He developed an eruption on the fourth day and was more seriously ill with this second than with the first attack. The physician in attendance assures me that he could not have been mistaken in his diagnosis of the first attack. Variola was epidemic in the village at the time.

The following are interesting cases as bearing upon immunity to vaccinia, but not to variola, or possibly to impaired immunity:

CASE 1.—Dr. O. C., aged 30 years, had vaccinia when a child. In 1900 he was attending cases of variola, but did not contract the disease from the first cases. He revaccinated himself, but without success. He therefore considered himself immune to variola. A short time after, however, he contracted varioloid from a variolous patient whom he was attending.

CASE 2.—Dr. P., aged 28 years, had vaccinia when a child. During the early part of 1900 he was in attendance upon cases of variola, but did not contract the disease. He vaccinated himself at this time, but without success. Shortly after this apparent immunity this physician, while suffering from septic infection received from a cadaver, was in attendance upon some severe cases (afterward fatal) of variola. He contracted the disease and was decidedly ill. His little boy, who had been apparently immune to vaccinia now contracted variola from his father and was seriously, although not fatally, ill. The physician's wife, vaccinated at the same time as her husband and child, had vaccinia and escaped variola.

CASE 3.—Dr. F., aged 30 years, was apparently successfully vaccinated in 1898 and again in June of 1900, when he was attending cases of variola. He had occasion to attend a woman ill with variola during her accouchement, and to resort to instrumental delivery for the child. Nine days later he began to feel ill. These symptoms were prodromal of a variola of severe type. His wife and children, who had been recently vaccinated escaped the disease.

CASE 4.—Mr. A., who had variola in 1880, was apparently immune to vaccinia in 1900, but not immune to a second attack of variola.

CASE 5.—Mrs. P., aged 39, had "cowpox" when a girl. In 1900 she was apparently immune to vaccinia, but contracted variola.

CASE 6.—Seven children in the family of Mr. G. were apparently immune to vaccinia, for repeated attempts failed to produce the disease. All seven of these children contracted variola, although resistant to vaccinia.

The following would seem to demonstrate immunity to variola, but not to vaccinia:

Dr. H. was successfully vaccinated at the age of 14 years, and again at 24. In 1900, at the age of 43, he had many cases of variola under his care. He revaccinnated himself five times at intervals of about four weeks. He obtained "partial reaction" to the first four of these and a "good scar" the fifth time. He did not contract variola. It would appear that while the immunity conferred by vaccinia against variola is quite positive, it may be limited in duration, and also in degree. This is equally true of variola against variola, and of vaccinia against vaccinia. It must also be admitted, I think, that there may be an immunity due to a previous vaccinia against vaccinia, but not against variola; as also an immunity due to a previous variola against vaccinia, but not against variola.

It is not my wish through these statements of facts to belittle the protective powers of vaccinia against variola, for of these I have already fully attested. We must, however, recognize the fact that there are exceptions to the general rule of immunity as regards both variola and vaccinia, and that we must not be too positive in our statements regarding the absolute protection of a previous variola or vaccinia against a repetition of one or the other disease, directly or interchangeably.

Before closing it may be well to ask ouselves the question: Is the present mild type of variola an unusual occurrence? In the United States, possibly yes; although this is an open question. Undoubtedly in the past when little or no attention was given to quarantine methods, mild epidemics of variola were ignored at the time of their existence and soon forgotten when once passed. The epidemics in which the disease prevailed in severe form were the ones which made a lasting impression upon all. Even in my limited study of the unrecorded mild epidemics, I have been able to secure records from residents of Minnesota which go to show that within the past thirty years there have been at least two localized epidemics in which the mortality from this disease was little, if any, greater than at the present time.

I believe it is generally recognized that variola does at times exist in very mild form in tropical countries. Of this I have no personal knowledge. On the other hand, variola may occur in most virulent form in tropical countries.

DISCUSSION ON PAPERS IN SYMPOSIUM ON SMALLPOX.

DR. WILLIAM BAILEY, Louisville, Ky.—I am much pleased at the opportunity given me to open this discussion, although most of my remarks will pertain to the first paper read by my neighbor, Dr. Happel. I regard the teachings of the paper by Dr. Happel as unfortunate and hurtful, and I believe that its bad influence will not be confined to his own people, but to the people throughout the breadth and length of this country. It is difficult to control smallpox in Kentucky if we depend upon the teachings in Tennessee; whatever the disease may be in Tennessee, when it crosses the line into Kentucky it is smallpox.

Regarding his remarks about a farmer remaining a month without seeing a neighbor, I think that is a remarkable thing in Tennessee; at any rate, for a man to be in Tennessee with smallpox with no possibility of any man coming in contact with it for a month, seems a remarkable statement. It seems to me that the consensus of opinion, even among the experts, is that the disease prevailing is smallpox; I am certain that it is nothing else but smallpox and, in many instances, the severe case can be traced to a mild case where it is decidedly typical. Therefore, we must regard the disease that is prevailing at the present time as smallpox and we should take such measures for its control as are radical.

DR. JAMES J. WALSH, New York City—In discussing the question of modified smallpox, or pseudo-smallpox, it is well to remember certain advances that have been made in the recognition of exanthematous diseases in very recent years. During the last ten or fifteen years, the medical world has come to recognize the existence of a third disease in the measles and scarlet fever group of diseases. This new disease, German measles, is now admitted by practically all medical men to be absolutely independent of either measles or scarlet fever. Certain observations in England, especially during the last two or three years, seem to point to the fact that there is perhaps a fourth eruptive disease in this group, independent of measles and scarlet fever on one hand and also of German measles on the other.

It is perfectly possible then that a third disease, independent of varicella and variola, may be found in the smallpox group. Of course, board of health experts will not readily admit the existence of such a disease, if it does occur. They are paid to determine whether a disease is smallpox or chicken-pox, not to make observations on a possible third disease. Any hesitancy on their part might easily lead to serious dangers to the community. The mass of the medical profession, however, should not commit themselves to definite opinions on this subject. It would not be surprising to find many more exanthematous diseases. At the beginning of the century most of the eruptive diseases we now know were grouped together. For a long time measles and scarlet fever masqueraded as smallpox. We know that there are ten different kind of nutgalls in this country, all produced by the sting of different, but very closely similar insects and upon the same kinds of leaves. The possible characteristic reaction of the human skin are by no means exhausted, and we have recently learned from Professor Widal's work in Paris on cytodiagnosis in pleurisy that even the cells of the serous membranes react quite differently to different forms of microbic irritant.

It must be remembered that the Vienna school of dermatologists has never quite given up the idea that varicella and variola may be only modified forms of the same disease. Their influence is considered of so much importance in Europe that in the last important text-book of medicine, Professor Nothnagel's, the treatise on varicella begins with the discussion whether variola and varicella are due to the same cause and it takes up some six octavo pages. So acute a clinician as Senator has recently expressed the opinion that varicella and variola are due to the same cause and that varicella especially spreads at a time when smallpox has crept into a locality.

We have had some 30,000 cases of smallpox this year and the number is not diminishing. Opportunities are provided for the study of smallpox, such as we never had before. Careful observation of the disease as it exists at present should be made. Dr. Happel's work in calling attention to the differences which exist between the disease as he sees it in some parts of Tennessee, and classical smallpox is deserving of commendation, not condemnation. Further observation, not resolutions of medical societies, are needed to settle the vexed question of a possible third disease in the smallpox group.

DR. LOUIS LEROY, Nashville, Tenn.—I concur very much with what Dr. Leavitt said about people approaching the disease and having such a very uncanny idea about it. In regard to leprosy people have been taught to think of this disease as nasty, uncanny and horrible in the extreme. The same is true of smallpox and the popular notion has even extended to medical friends who have seen very little of it, and whose idea of this disease is vague and hazy, and who expect that the patient should stand fifty feet away in the open air lest they should be exposed to the contagion. The intensity of the infection certainly varies a great deal, but, I have seen patients with typhoid fever who

could not be made to take to the bed; also, cases of pneumonia and scarlet fever in children who could not be made to stay in the room; and yet, other children exposed to them, contracted the disease and died.

Why should we insist upon a dozen names for smallpox; there is but one smallpox. Giving the disease so many names has a vicious effect upon the public. Dr. Happel mentions that the severity of the disease following was not dependent upon the severity of the onset; that is certainly true, and I wish to call attention to the fact that text-books on practice say the same thing. The observations made are certainly in favor of smallpox rather than against it. As to the statement that there was no pitting, I would also call attention to what is said by many writers; they claim that, in the discrete types of smallpox, pitting is absolutely the exception. I was exceedingly glad to hear Dr. Bailey, of Kentucky, say that when the disease crossed the border line and got into Kentucky it became smallpox. I would like to say that there is no transition at that border line. I have had an opportunity of seeing a number of cases on that line and I have tried to prevent a good number of cases crossing the line. Near that Tennessee-Kentucky line there are a large number of light cases of smallpox. I made a diagnosis of smallpox at Clarkesville, Tennessee, and I was ridiculed, but I had the State Board of Health behind me, and the case was quarantined. This year I traced this epidemic successfully to the Tennessee side; in the epidemic there was a a mortality of 60 per cent. I have here a number of photographs taken of that case which was diagnosed as pseudo-smallpox at Clarkesville and from which the epidemic was traced that gave a mortality of 60 per cent. If this is called "pseudo-smallpox" it is a term applied to something which should be killed before it becomes too common.

Speaking of the individual who went to school with an eruption on the body, I have one question to ask: If it was in the knowledge of the health officers that this case was one of smallpox or any other disease possibly contagious, what was the physician doing when he allowed this person to mingle with the school-children?

DR. HAPPEL—The health officer knew nothing about it until the disease had been there.

DR. LEROY—How about the school teachers?

DR. HAPPEL—The school teachers were negroes.

DR. LEROY—As to the statistics of vaccination I beg leave to read the following, taken from one of my former articles: "In one series of records made by the writer this year, 1100 miners were examined, variola having been prevalent in that locality for a year previous. Of that number 800 had been vaccinated and had passed through the epidemic unscathed. Of the remainder, 100 had suffered from the disease and 200 had neither had the disease nor been vaccinated. Of 30 odd cases suffering at the time in their midst not one had been vaccinated. Only in four instances did any of those who had had the disease show evidences of previous vaccination, and in one of these the mark was over twenty years old; the other three gave evidence of having been only septic sores and not typical vaccine scars."

DR. WILLIAM THOMAS CORLETT, Cleveland, Ohio—I am impressed with the fact that there is a great waste of energy here this year. Yesterday we showed a large collection of slides, in the Section of Dermatology, which would well illustrate many of the phases of variola described this morning. I consider myself fortunate in being able to hear the papers read, and I heartily concur in the general soundness of the views expressed. I had hoped, however, that I could congratulate myself on not hearing such a paper as was read last year at Atlantic City, which I believe has done much injury. In Cleveland we have a very extensive epidemic of smallpox, which has increased to 1000 cases since last January, and which I believe was brought about by the fact that many did not recognize the disease as being smallpox. Physicians who had had experience with the disease in former times ridiculed the idea that the pest-house contained a true case of variola. So far as I have been able to observe the disease which has been recognized as smallpox during the past twenty years presents a distinct entity, just as syphilis does. In regard to Dr. Leroy's method of vaccinating by means of the hypodermic syringe, I consider it a good one, although I have never used it, but it will bear further consideration. Another point made was that variola was often followed by a successful vaccination. About a year ago Dr. P. asked me to investigate this subject, but as I have always regarded the occurrence of a successful vaccination following variola as evidence of a mixed infection, the subject did not seem to me to be of sufficient importance to call for further investigation. Dr. Bracken says that he has seen successful vaccination following variola, and I must agree with him.

What I shall now say I know will be unpopular because of the great difference of opinion which prevails. I began the study of diseases of the skin by entering a smallpox hospital in 1882 in London, and during my time there I saw nothing but skin diseases and I never saw a case of varicella occurring in a person over 15 years of age. I do not deny that it sometimes occurs in adults; John Hutchinson has seen one, possibly two cases, of varicella in adults. Dr. J. Louis Smith has seen one case of varicella in an adult which he has referred to in his work. Still another case was referred to by Dr. Austin Flint. Therefore, when a case presents itself to me with a supposed diagnosis of varicella, in an adult, I am inclined to do as is recommended by the author of the paper on smallpox in Zeimmsen's Cyclopedia, in cases of supposed varicella occurring in an adult—to always treat the case as one of smallpox.

DR. F. S. RAYMOND, Memphis, Tenn.—I want first to endorse Dr. Leroy's practique, as detailed in his paper, with reference to the management of smallpox hospitals. His paper is up to date, and such rules as he lays down should be carried out in the conduction of smallpox hospitals everywhere.

With reference to the papers of Drs. Spalding, Leavitt and Bracken, I must say they were all most excellent; the gentlemen have arrived at the same conclusions from the same line of reasoning which I have and which I believe to be correct. I endorse the three papers entirely, except Dr. Leavitt's statement that chicken-pox is a child's disease and never seen in the adult. I have seen a number of cases in adults, and even in people past middle age.

I beg pardon for consuming the time of so intelligent a body of men and women, discussing the only feature of this subject about which there is a discussion, namely, the diagnosis of this almost national epidemic of variola vera, and I hope such a discussion will not occur in this Association during the next fifty years, if I am so fortunate as to be in attendance at that time. I feel sure that 95 per cent. of all intelligent physicians, who have had opportunities to study this disease, believe and in fact know it to be genuine smallpox.

From personal observation, the disease and the special cases described by Dr. Happel in his paper are just such cases as we have been treating in our smallpox hospital near Memphis for five years, and I know that many of our cases have been employed as nurses and other helpers in our hospital for months after recovery and we have never had a single instance of such persons contracting any like disease in a severer form.

While Dr. Happel claims faith in vaccination against "smallpox," he states that the negroes in his county have not been and will not be vaccinated. Every physician conversant with the subject at all, knows that in the South 90 per cent. of all cases occur in the negro race, which to my mind is the best evidence that Dr. Happel's pseudo-smallpox is variola vera; as it is a well-known fact by everybody that the whites are much more generally vaccinated than the negroes. Dr. Happel mentions persons who had been seemingly successfully vaccinated, having the disease. I take it that every one knows that to have had a sore arm leaving a scar is not proof positive of thorough vaccination, rendering immunity.

Dr. Happel is health officer of his town and county, and as such will he say to this body that he does not require physicians to report mild cases of diphtheria and scarlet fever, and that he does not require the usual precautions as isolation and disinfection in mild cases, that I am sure he does of the severer forms of both diseases? If not, then why not take the same

view with reference to handling mild diphtheria and scarlet fever that he does of so mild a form of smallpox?

DR. J. F. MARCHAND, Canton, Ohio—The relations of the health officer and the physician to a community are of a two-fold nature; first, the best interests of the community demand that this disease be called by its right name; second, the commercial interest of the entire community should not be neglected. If this disease that is prevailing is smallpox, call it smallpox, and, if it is smallpox, it ought to be quarantined. I am sorry that Dr. Happel read that paper; at Atlantic City, last year, he read a paper that was hurtful and harmful. Gentlemen, the time is at hand when everyone should unite in endeavoring to crush out smallpox, and there should be a united action on the part of every state and territory, and some plan of action should be formed. I have watched with great interest the spread of this disease all over the country, and it seems to me that there is no diminution of its prevalence in the rural districts, because there the physicians often hesitate in calling it smallpox. In the cities the only successful way of dealing with these cases is in municipal hospitals. I am glad to hear the papers read telling us how to protect the interests of the community. I visited the eastern section of Ohio last year to help out in some doubtful cases in diagnosis, and there was one thing that I emphasized, that is, treat all suspected cases as cases of undoubted smallpox.

I think, gentlemen, that the time will come when the science of medicine will demonstrate to the whole world that instead of 50,000,000 people in Europe alone dying in 100 years before the days of Jenner, the disease will almost be obliterated from the face of the earth. If the mortality is low in this form of the disease, which has been prevailing so long in the United States, it does not prove that this disease is not smallpox.

DR. D. B. PRITCHARD, Winona, Minn.—During the past seven months I have had a large experience with this disease in an epidemic where we had 1758 cases of smallpox; of this number there were but 17 that had ever been vaccinated, only 3 of these being recent, the balance having been vaccinated from ten to sixty years ago. There were 646 houses quarantined, and in 152 houses there was but a single case of the disease. In these houses only the unvaccinated members of the families caught the disease.

DR. J. A. BARR, McKee's Rocks, Pa.—I should like to raise the question as to what constitutes a "successful vaccination." This subject came up two or three years ago, during an outbreak of smallpox. The school board said that every child should present a certificate of successful vaccination. The secretary of the school board came to my office, when I refused to grant a certificate to one of the children, and asked me why I did this. I said: "Suppose that I give your children a certificate of successful vaccination, how are you going to view it?" He said: "I would believe that the children would be immune from smallpox." I replied: "Exactly." I also told him that statistics showed that, out of 6000 cases, 14 per cent. or more died after having been vaccinated; and out of the same number, that had been vaccinated twice, over 4 per cent. died; and of those that had been vaccinated, three times, only 1.75 per cent. died; and of those that had been vaccinated four or more times .75 per cent. died. Therefore, in order to render these children immune, I said that they should be vaccinated four times. People should be taught that immunity is not conferred by one vaccination; that, according to statistics, it takes at least four vaccination scars, well marked, to produce successful vaccinations. On this account, I refused to sign the school board's certificates.

A VOICE—Why not vaccinate four times at once?

DR. BARR—That is the German idea.

DR. E. H. MARTIN, Clarksdale, Miss.—When the recent epidemic of smallpox made its first appearance it was in such a mild form that it was only by means of certain cardinal symptoms that it could be recognized as the smallpox of the text-books. There naturally followed a very widespread sentiment of doubt, among the profession and the laity, with regard to the disease, as it then appeared, being the genuine article. However, since during the past year so many malignant cases have occurred, that doubt has been swept away. No one could treat a dozen, or even one, case of confluent smallpox and fail to recognize its identity. And when it is at the same time observed that those who had had the disease in its earlier, mild form are protected from the malignant form there is no longer room to doubt that the disease has all along been real variola. Nevertheless, it is equally certain that there are distinct varieties of smallpox, as well as various types of each variety. In observing several hundred cases during the past two years I have recognized at least four distinct varieties of smallpox. The individuality of each variety is established by the fact that persons contracting the disease would develop the same variety of smallpox as had the patient from whom the disease was contracted. This was true when as many as three varieties, brought from three separate outside foci, were prevalent in the same locality at the same time. In short, each variety breeds true to seed. It is needless to state that these observations were made where unvaccinated parties contracted the disease, and in cases where it could not have been modified by vaccination, otherwise the observations would be of no value. The fact that each variety is really variola vera is proven by the immunity which each variety gives to itself and all other varieties. Isolated instances of a lack of immunity after one of the mild forms proves nothing, as we have just as many instances in which severe types of the disease gave no immunity. They are merely the exceptions. As to the claim that vaccination does not protect against all of these varieties of smallpox, such claim is absurd when coming from a member of the profession as universally and as satisfactorily protected as the members of the medical profession have been by vaccination. One hundred thousand doctors have probably been exposed to smallpox in this country during the past two years, and those contracting the disease would probably not number a dozen.

What we can claim in behalf of the public and as an excuse for the cranks who are doing antivaccination talk, is that much of the virus now on the market has been so attenuated that it is practically useless. It may be well enough to use attenuated virus for routine vaccination of children in the absence of variola; protection may be gradually acquired by repeated vaccinations with such virus. But in the troublous times of an epidemic it is more important to give protection to the greatest number than to try to avoid a few bad arms, especially as secondary infection can not be always avoided even when the mild virus has been used.

It may be worthy of note to observe that the only "single-scar" cases of protection are every one from arm to arm vaccinations done fifteen or twenty years ago. We can not return to that method, but we, at least, should have a more highly vital virus on the market than is some of that most used.

DR. G. W. GOINS, Breckinridge, Mo.—As a scientific body I think we do Dr. Happel an injustice; as scientific men we ought to recognize the fact that as yet the exanthemata can not be scientifically diagnosticated and until further research has been made in those diseases there is still room for doubt. I think this Section, as a scientific body, in attacking Dr. Happel so vigorously does him a great injustice.

DR. C. F. DWIGHT, Minneapolis—The question for discussion is: What can be done? We are practically all agreed that smallpox prevails throughout the country and that it can be prevented in 99 cases out of 100 by successful vaccination. Therefore, I think the question before us is: What is the best course to pursue to get all the people in the country vaccinated?

DR. HAPPEL, closing the discussion—I had no idea a physician living in a town of 2500 or 3000 inhabitants could stir up so much discussion as I have done; there must be something in it. I do not wish to be misunderstood or misrepresented, as I have been, upon the question of vaccination. There has never been said by me anything in opposition to vaccination; on the contrary, I have ever been an earnest advocate of compulsory vaccination. In the city in which I live, under an ordinance which I drew myself, no child is permitted to attend our public schools who can not make proof of recent vaccination. So much has been done along that line that 90 per cent. of our

population has been vaccinated. Had the same zeal been displayed in the cities in which the "bosses of the State Boards of Health" live, not only in Tennessee, but in other states, smallpox would long ago have been a thing of the past. Our cities are the breeding places of the disease. Had as much gas been used around our legislatures, as has been wasted here this morning, helpful legislation could have been gotten long ago.

You call this disease "mild" smallpox; the Illinois State Board of Health calls it "modified" smallpox; then why should not a different adjective, "pseudo," be applicable?

I know nothing of the disease seen by Dr. Bailey, in Kentucky. He says it was smallpox, and I suppose that to be the case. He saw none of the cases reported by me, nor have any of the members of the Tennessee Board of Health. The papers claimed that the infection in those cases was carried by dogs, and the authorities had the dogs killed, but I suppose that the real scapegoat was the poor "nigger," but he was not killed.

In reply to the gentleman from Minnesota in regard to the "interrogation points" in my former paper, I have only this to say, that interrogation points give more evidence of study and thought than quotation marks, and many of the things that have been read here to-day should be properly inclosed in quotation marks. Nearly all of many of the papers can be gotten from any of our text-books on Practice.

One other point in regard to experts. We are being told almost daily that no one, except an expert, can give a positive opinion upon any subject. I asked a member of the Tennessee State Board of Health for a definition of an expert, as bearing upon this epidemic of so-called smallpox. He answered me that an expert was "a man sent to see and report." In view of the work done in Tennessee by the Board I readily accepted that definition of an expert. Now, if that is what is meant by an expert, God save us from experts. In some instances it can be proven that these experts, not only in the State of Tennessee, but in other states, have visited these cases, and looked at them through windows, and in other cases have examined them from afar with the aid of opera glasses.

I believe that any honest practitioner can recognize a vaccine mark when he sees one, but the teaching of to-day is that an expert is needed for even that purpose. If a vaccinated person contracts this disease (and the records and reports show numbers of such instances), we are at once told that the vaccination was not properly done. Dr. Runyon, cited in my paper, reports thirty-seven cases where persons who had been vaccinated contracted this disease. My position in regard to these cases is that they are not cases of genuine variola vera, and in this position and opinion I have been sustained by physicians in the city of Nashville, Tenn., eminent in their profession, filling the chairs of some of the medical colleges in that city, as well as by others, who, like my distinguished friend, have also passed the 400-mark in the number of cases seen by them. They saw the cases in person, as I did, and not as has been done by some who have occupied the floor here to-day, through the eyes and reports of others.

The consideration of the commercial aspect of the case has been brought into this discussion. In the State of Tennessee, thousands of dollars have been spent to no purpose. One county paid out as much as $32,000 in a vain attempt to crush out the disease, even being aided by the wisdom of the State Board of Health, and then failed. In my own county we spent less than one-sixteenth of that sum, and have kept the epidemic under perfect control, except when some other county furnishes us with a fresh supply.

As to the management of these cases without guards or pest-houses. When I am called to see one of these cases, I put out a yellow flag, and notify the inmates that they have a contagious disease, and must stay on their own premises till I give them permission to leave. The same notice is given to outsiders about going about the quarantined house, and all parties are emphatically informed that any violation of this notice will be punished by a heavy fine. These orders are never violated, and I have never had the disease spread from its starting point. I do not mean to be understood that you could manage in the same way in the large cities. I have so far found no need for guards or pest-houses. The most of our cases are among the negro population, but few occurring among the whites.

I do not care to reply to the gentleman who referred to my last case reported in my paper read, as apparently one of spontaneous origin. I regret that he should have, in the presence of ladies, illustrated his meaning as he did. A lady is or should be a lady, and is entitled to be treated as such, even though she be engaged in the practice of medicine.

Speaking of the resolution offered to declare this disease smallpox, I have only this to add: Your resolution amounts to nothing. It says to the public that those of you who vote for it are of the opinion that the cases reported, which you have never seen, are cases of variola vera. It carries with it no weight so far as the minority vote is concerned. Such action reminds me of my early day readings in Greek, where an account is given of an assemblage of the citizens of Athens held for the purpose of discussing the management of one of their many wars, by their at that time numerous generals, who were made or unmade by popular vote. After a lengthy discussion of the merits and demerits of the then general, a suggestion was made to elect another general in his stead. A motion to amend was offered that they vote all their asses horses. The one offering this amendment was laughed at, but proceeded to explain that if they could create a general by a vote of the assembly, then they certainly, in the same way, could change their asses into horses. The adoption of this resolution will come as near convincing the general public that this disease is variola vera, as would the adoption of the amendment offered in the Grecian meeting have had in changing their asses into horses. The chairman of this same section last year very properly ruled this same resolution out of order, and it is as much out of order now as then.

Mr. Chairman, there are many more things that I would have liked to have considered in my closing talk, but my engagement with the Board of Trustees prevents my remaining longer.

DR. SPALDING, closing the discussion.—Dr. Happel favorably refers to the control of epidemics of smallpox by leaving the patients in their homes. In Tennessee this method resulted in permitting five cases to escape to Chicago. No case came to us from Kentucky. Regarding the question of vaccination as a protection against smallpox: In our hospitals over 200 students were admitted in order that they might study the cases. Every student admitted had to have three vaccinations. In not a single instance did a student contract the disease.

DR. LEAVITT, closing the discussion.—In reference to the diagnosis as made by Dr. Happel, it struck me while he was reading his paper that some of the cases he saw and described were cases of varicella, particularly in the vesicular stage.

DR. BRACKEN, closing the discussion.—Dr. Happel speaks of the terms used—mild smallpox, modified smallpox, etc.—and asks why not use the term pseudo-smallpox. The reason is that those who speak of a mild or modified smallpox speak of a variety of a given disease, and all who speak of it in this way recognize the fact that vaccination will protect against the mild or modified smallpox. Dr. Happel, on the other hand, makes a point that vaccination will not protect against the disease which he calls pseudo-smallpox.

Another party speaks of the different varieties of the disease. I think you may recognize as many varieties as you please so long as you keep within the limits of the varieties of the one disease.

Dr. Happel refers to the expense. If the sentiment of this meeting had been in support of Dr. Happel's paper, this would have been the most expensive paper read at this meeting of the American Medical Association. Such a paper would have cost Minnesota many thousands of dollars.

The period of infection of this disease is during the desquamative stage. I do not take the position that it is not infectious from the beginning, for I remember a case in a hospital with a diagnosis of typhoid fever. The patient was placed in a private room. The next morning the eruption of smallpox made its first appearance. There were only two or three persons who had been in this room prior to the time

when the diagnosis of smallpox was made. The patient was removed as quickly as possible to the quarantine hospital. One nurse, who was not nursing the patient, but who was in the room but a few minutes, contracted smallpox. This shows the possibility of infection during the early stages. I have in mind another case of a young man, who, in probably the first day of the eruption of the disease, picked up a child and carried it a short distance. This child, his nephew, was in due time taken down with smallpox, the result of this exposure.

NOTE.—The following resolution was adopted by the joint Sections on Practice of Medicine and Hygiene and Sanitary Science, after the above discussion:

"*Resolved*, By the joint Sections on Practice of Medicine and Hygiene and Sanitary Science, That the disease now prevailing extensively in the United States and called in some instances 'pseudo-smallpox' is genuine smallpox, and should be so treated with vaccination and quarantine by all health authorities. Carried."

CANCER OF THE UTERINE NECK.

WITH COMMENTS ON THE PRESENT-DAY TEACHING.*

J. M. BALDY, M.D.
PHILADELPHIA.

Cancer of the neck of the womb is practically incurable. This statement is made advisedly and the proof of its correctness lies in the reports of results of treatment from all quarters of the world. At the present time there is no cure for cancer short of surgery, and it is no abuse of language to state that this disease is surgery's disgrace. Such statements I am well aware will be called radical by timid men or by men of little knowledge, they will be called bold by even men of knowledge and experience, but it will be a bold man indeed who can conscientiously call them untrue. I repeat that cancer of the neck of the womb as far as results go to-day is practically incurable. It is a reproach to our art, nay it is even a reproach to ourselves, but still unpalatable as the statement may be, it is the full truth. No amount of juggling with figures or facts will alter this state of affairs, nor will spurious nor exaggerated claims make matters better for those of us who want the truth and not garbled statistics. It will do little good to ostrich-like bury our heads in the sands of self-complacency, accept statements made from any and every source and sit with our hands folded whilst our patients die. What man of large experience can look over the past dozen years of his practice and put his fingers on any considerable number of patients who have suffered from this disease and are alive to-day? Who but can count the dead by scores, and this despite any and all methods of treatment known to us?

It is not possible to state with any degree of accuracy the exact proportion of such cases which it is possible to save, but judging from the past it is an absolute, although lamentable fact that it is less than 5 per cent. The best statistics on this subject with which I am familiar in this country which pretend to sufficient accuracy to be of any value have come from Johns Hopkins Hospital. Their cases cover all which have come to that institution since the institution began its work. On the face of these statistics 20 per cent. or more of such patients are cured—and this is a small claim as such claims go—at least such is the impression given the profession, although the facts are there and any one can deduct the real truth from them himself if he so chooses. As these statistics are a fair representation of all other reliable reports both from home and abroad, it may be well to examine them somewhat critically and draw our own and probably different deductions as to percentages. The facts are there and we are just as capable of judging the results and forming conclusions as are their compilers.

Seventy-three cases of cancer of the cervix were operated upon: 15 cases, or somewhat over 20 per cent. are alive to-day. But then, 68 cases were rejected as nonoperable—incurable—all of whom are of course dead to-day. Consequently, when we draw our own conclusions they are that a little over 10 per cent. instead of over 20 per cent. of cases of cancer of the uterus which have come to that institution are alive to-day.

Nor is this all. It will be recalled that Johns Hopkins Hospital has availabe a magnificent pathological department and that all gynecological cases passing through that institution have a thorough and systematic overhauling by men specially trained and skilled in this work. Patients are freely examined under ether, all curette specimens are examined microscopically and every safeguard as far as can be is thrown around the diagnosis. The consequence is that a diagnosis is not infrequently made in cases where the disease is so early as not to have been suspected and in a few where the diagnosis is even then (after the microscopic examination) doubtful the patient is given the benefit of the doubt. It is no news to the pathologists to state that there is often a wide difference of opinion amongst them as to what is and what is not cancer in the very early stages of the disease. Not infrequently we find men claiming certain minute changes as *surely malignant;* whilst others say *perhaps* (but not certain) and still other say *not at all.* What is the practical deduction in all this? Simply that the man who operates as the result of the microscopic examination and gives his patient the benefit of any doubt, occasionally operates on a case which is not cancer and which of course has no recurrence. This is exactly what they do (and properly so) at Johns Hopkins. Is it then out of the way to think that probably there may be a case or two (or even more) amongst the 15 patients of that institution who are still alive who would come in this category? If even a single such case exists in that group what then becomes of the 10 per cent. of cures?

Nor is this all; probably the most serious aspect of the danger of these statistics remain to be considered. Fifteen cases are reported alive. Analyse that statement for one moment and see what a false impression it gives. Of these 15, 9 have only passed from 10 months to two and one-half years since their operation. Only 6 cases alive from 3 to 6 years after their operation. Who can say that every one of the 9 cases under two and one-half years will not die of the disease in the next two and one-half years. Even the 6 who are alive after three years are by no means safe. These same statistics report a number of cases who have died four and one-half and five years after the operation.

What now becomes of the 10 per cent. cures? Am I too radical when I state that less than 5 per cent. of cases of cancer of the womb are cured? I would probably be nearer the real truth if I said 2 per cent. In view of these facts am I not justified in my opening remarks that "cancer of the neck of the womb is practically incurable?" The same analyses of the recent statistics from Germany gathered and reported by Winter shows almost exactly the same results, although reported for entirely the opposite effect.

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Obstetrics and Diseases of Women, and approved for publication by the Executive Committee of the Section: Drs. A. H. Cordier, W. E. B. Davis and Henry P. Newman.

If those then be the facts what is the remedy, or is there any remedy? It matters little what the line of treatment, be it medical or surgical, although the surgical side of the question is the one which appeals to me, the remedy to my mind is plain: 1, a full realization of the facts as they stand, and 2, a sound understanding as to the importance of the early discovery of the disease.

The tendency of the teaching in the schools of to-day is in these respects bad; if I may be candid, abominable. I, in no way, mean to state that the facts of the present day teaching are unture, but I do mean to say that the tendency is to lay such undue stress on certain points as to practically obliterate from the ordinary medical mind the more important and vital points. The two particular points to which I refer are the statistics and the use of the microscope for diagnostic purposes. We well know that there are periods of fads in medicine as well as in other affairs of life and that these fads often result in disaster in more ways than one. This question of the laboratory is rapidly becoming a dangerous fad, and unless there is a halt the coming generation of doctors will be incompetent to early distinguish this disease and will show even worse results in cancer of the cervix than our own.

Let me illustrate for a moment what I mean by the two abuses to which I have referred. It must be apparent to everybody, if we wish for better results, that the earlier the diagnosis is made and the earlier the case is brought to the surgeon the greater the chance of a cure. This appears to me to be axiomatic. It then behooves those of us who know the truth about the results of treatment to bring this matter home in no indecisive manner to the minds of the present and future practitioner of medicine into whose hands these cases first come. It behooves us no longer to deceive him directly or indirectly, consciously or unconsciously. If we are to continue to indirectly deceive him by our statistics in talking and writing of 20 to 60 per cent. of cures when we are fully conscious that when the whole group of cases be studied together, as they in all fairness should be, the percentage of real cures is from 2 to 5 per cent. only, what are we to expect from him?

First, a great laxness in the attempt to discover these cases early; second, a disinclination to hurry them at once to the surgeon, because forsooth his conscience is easy in the supposed knowledge that when he does decide to send them a large percentage can be saved at any rate. In other words, he is not impressed with the terrible nature of the disease and the almost certain fate which awaits his patient. Quite the reverse is the result of the teaching of the day; his mind rests easy, his patient rapidly approaches inevitable death and we who should enlighten him as to the real truth sink him deeper in his complacency by feeding him with our statistics of successful operations, ourselves as successful operators. They may not be direct falsehoods, but they are the more dangerous in that they have a semblance of truth and are indirectly most abominably deceptive.

If he knows that of all the cases of cancer of the cervix it falls to his lot to see in practice but from 2 to 5 per cent. at most are permanently cured, he will become the more cautions in his observations, will discover these cases the earlier and when a case is once suspected will be the more likely to seek consultation at once, both for the sake of his own reputation as well as for the safety of his patient. Once beginning to watch all his female clientele with this object in view, will he place his dependence on the laboratory and the microscope for his diagnosis? Far be it from me to decry these valuable aids to modern medicine or to belittle all that has been and is being done by the laboratory men, but far be it from you even indirectly to decry the clinician and all he has done and is doing in the way of acute observation and deduction from accurately observed facts. The clinical observation of facts comes before the laboratory examination: the laboratory examination is an impossibility without the prior clinical work and is after all at best corroborative; it rarely originates. Few cases of cancer of the cervix are diagnosed by the microscope where the diagnosis is not possible by the clinical study of the case. Had the case not been strongly suspected of cancer the aid of the microscope had never been sought. The few exceptions to this have occurred in routine examinations of specimens in well appointed institutions with all modern advantages in the way of appliances for teaching and study. It may be claimed that this is the goal for which we should all strive; that such examination and study should be made universal. The millennium has not yet come nor is it yet in sight, consequently we are forced to content ourselves with being practical (rather than theorists) and accepting situations as they exist obtain the best practical results from them possible. For instance, we are faced by these indisputable facts:

The great bulk of the profession live away from the teaching centers and laboratories and have few or no facilities for such routine work. They have not time for it. They have not the special knowledge necessary to make it of much use. They have not the apparatus. There are few communities in which there is even a single man with the requirements necessary for this work, to whom it might be referred. What is the use then of laying so much stress on the microscope to the belittling or exclusion of methods which are within the reach of all practitioners where ever they be, and upon which they must of necessity rely? I mean by this the clinical study of cancer patients, be the disease early or late. The most recent book on cancer of the uterus (Cullen), a work which is based on the accumulated experience of one of the great teaching institutions of medicine in this country (Johns Hopkins), a useful work for the specialist who can read between the lines and who can not be contaminated by its false teaching, a work which should be excluded from the hands of every practitioner of medicine (other than specialists) in the land, has this to say on the subject of diagnostic symptoms (our only apparent hope of advancement in the treatment of this disease): "After thoroughly analyzing our own cases, and studying the records of others, we find that diagnostic symptoms at best are meagre, and in the early stages give little or no clue to the real nature of the disease." The teaching throughout the whole book is consistent with this statement and it is sad to relate that this fairly represents the tendency of the teaching on this subject to-day, not only in this great medical institution, but in many others. No greater mistake was ever made; no falser teaching was ever promulgated than this. The statement is absolutely without foundation in fact, and if any of us arrive at a similar conclusion it is because we have allowed the laboratory craze to blind our best judgment and obscure our acuteness of observation, to say nothing of blunting our reasoning faculties. Quite the reverse is true. The symptoms of early cancer are as plain as those of any other disease in its early stages and the reason it is not oftener detected early is the fault of the observer,

not of the symptoms had they been properly observed and interpreted. And it is just such teaching as is contained in this book (all microscopic, nothing clinical) which will make careless men more careless and untaught men ignorant. I repeat that the symptoms of cancer, although meager in the very early stages, are sufficient, and it has been the rare case indeed in which the microscope has made the diagnosis that a retrospect of the case has not caused great surprise at the number of symptoms present and their significance. I protest against such teaching and look in the future for a return from the will-o-the-wisps of the laboratory to the sound ground of educated and accurate clinical observation. It is not my intention to drift into an exhaustive study of the symptomatology of early cancer of the uterus, but there are a few points to which I will refer briefly.

There are three great symptoms of cancer, pain, odorous discharges, hemorrhages; these taken in conjunction with progressive loss of flesh and strength present a picture which becomes so significant that no one is justified in failing to see their significance. This picture complete is however the picture of well-advanced cancer and is never present in the disease in its early stages. Hemorrhage with possibly beginning loss of flesh and strength is the diagnostic sheet-anchor in the early stages. No one knows how early bleeding begins, but begin it does very early; early enough to give plenty of warning of what is coming. In this connection there are one or two circumstances which should be considered almost pathognomonic, so few are the exceptions. They at least should make the suspicion so strong as to demand a most careful and immediate overhauling of the patient.

A woman once having passed the menopause, the menstruation having entirely ceased and a year or two, or six or more years later but a single show of blood from the genitalia be noticed no matter from what supposed cause (traumatism excluded), cancer will be found with but rare exceptions. Personally I have never found an exception.

Even during the menstrual life of a woman, if a blood stain be noticed after coition; if after the use of a syringe a stain appears or the water is bloody; if following excitement or exercise, or from any similar cause; if a slight stain be observed in the mornings on arising or following constipation (reasonable cases being excluded), cancer should always be suspicioned and a mistake will rarely be made. It is true some non-cancerous ulceration and mucous polypus will cause this symptom, but rarely.

These symptoms are so readily observable and are so significant that it is a mystery how often they are ignored and the patient allowed to drift into an incurable state. They are so plain that he who runs can read. Not so with others which, although taking a little more acuteness of observation, are none the less significant.

All women from puberty to the menopause bleed, fortunately with more or less regularity. The bleeding itself is not so significant as the comparison with what it has always been before in the same woman. Naturally, then the man who can make the most valuable comparison is the one who is familiar with all the details of the woman's menstrual life—the family doctor. It is quite easy for such a man to know almost any irregularity in a woman's bleedings, to know of any reasonable cause for such irregularity, to compare such irregularity with the past and to consider it in conjunction with the present state of general health, progressive or persistent otherwise unexplained loss of strength or flesh. Being always on the look-out and suspicious for his patients, being always determined in every case to exclude cancer where the symptoms (irregular bleeding) are not readily explainable by other lesions, as a careful man always considers and excludes pregnancy in any abdominal growth, how could the case escape a suspicion where the bleeding from the woman's genitalia becomes profuse or comes at unusual times. It is not so much the quantity of blood lost which is important as the fact that blood even in minute quantities is observed at times not expected and which is incompatible with the physiologic flow or a prolongation of this function (due so often to a neoplasm or an inflammatory lesion.) Any or all these points are significant and call vigorously for a careful examination. They may be readily explained at the examination by a polyp or an erosion or a benign ulceration, but most frequently cancer will be found; early often, even so early that the laboratory man will decline to make a positive diagnosis from any small specimen you may present to him; so early at times that he will be uncertain while you will be so certain that you will operate on the case in spite of his hesitancy. Many a time have I done this, many a time I hope and expect to do it again. In few cases have I ever found that after a careful and prolonged study of the removed organ he (the pathologist) has not finally fully agreed with my diagnosis—so far superior is clinical observation and deduction to the microscope in this disease. So far convinced am I of the truth of this position that in cancer of the uterus I never expect to allow the microscope to stay my hand—no matter what its decision may be. If it agrees with my clinical deduction well and good; if it is uncertain and hesitates, it is not going to prevent me trying to save the life of the patient.

I repeat that all our statistics on cancer of the cervix uteri (or rather the interpretation of them) are false and grossly misleading. The microscope as a means of diagnosis is vastly inferior to clinical symptoms and observations.

The teaching of the day in most of our great schools of learning in the respect is as bad as it well can be; consequently the outlook for competent observers and diagnosticians for the future is bad.

DISCUSSION.

DR. J. H. CARSTENS, Detroit, Mich.—There is no one who has been more inclined to become pessimistic in reference to the discussion of cancer than I, but I feel grateful that I have not become such a pessimist as my friend Baldy. I am not at all astonished that he can not show a greater number of permanent recoveries if he absolutely discards laboratory investigation. If he waits until as the result of the smell and the discharge he can make a clinical diagnosis, if he waits that long, there is no wonder that the number of recoveries will be very small indeed. Our object has always been to get these cases early, and if you wait until you can smell the bacillus or until you can hear them sing, your patients will certainly die inside of a year. When you have a woman who flows more than she ought for two, three or four months, curette that uterus and carefully examine the curettings with your microscope. You will find that it is probably a benign adenoma. The hemorrhage will probably recur in spite of your curettage. You curette again two or three months afterward and find that your case is a malignant adenoma; then is the time to operate. If you wait another three months and again examine the scrapings with your microscope, you will find that it is an adenocarcinoma. Then it is too late to try to save the woman's life. Early investigation and early operation is the

proper thing to do. I will give Dr. Baldy every opportunity to look at a little plug removed from a lacerated cervix and tell me whether it is malignant or not, but I know that some of these cases are malignant before I have them examined microscopically, and if I get the report that they are malignant, then I take out that uterus within four weeks. In that way I save the woman's life. If I wait until I can smell it, then an operation will do no good. The trouble is, we get them too late. I can show you cases operated on ten years ago, where the microscope showed beyond question that it was a cancer, in which there has been no return of the disease. Other cases that seem to be just as mild or milder would have a recurrence *in situ* or some other part of the body within a year. We can not tell by the appearance of a case whether there will be a return. Sometimes the most favorable cases will recur and the most unfavorable cases will have no recurrence. What I plead for is early diagnosis; then we will have fewer recurrences.

DR. J. G. CLARK, Philadelphia—Three great objections can be raised to Dr. Baldy's paper. The first objection, a very strong one, is that the paper comes from a man who has not gone into the pathologic side of the question, a man who criticises from the standpoint of one far removed from the scientific aspect of this subject. The second objection, also a very potent one, is that the statistics of others are taken as his basis for criticism. Why does he not bring forward his own statistics? Third, a special point he made, he does not recall a single instance in which he ever took out a uterus which he diagnosed clinically as a carcinoma, and which was proven to be otherwise after that. If he absolutely excludes the microscope as a factor in diagnosis, I would like to know how he can tell whether or not he made a mistake.

Dr. Baldy has attacked the work of Dr. Cullen, and as he is not present I feel that I must say a word in his defense. One of the first things Dr. Cullen brought out in his book is the clinical side of these cases. He dwells especially on the three cardinal symptoms of carcinoma; then he says in a general way that failing in this we should curette and examine the scrapings microscopically, because the microscope is unquestionably superior to our ordinary crude diagnostic methods. In this way we can positively determine whether or not it is a carcinoma. If there is any one point which I lay stress upon in my lectures and in my clinical demonstrations to students, if there is one thing I try to impress on these men, it is the early diagnosis in these cases of carcinoma, a fact which Dr. Baldy himself has alluded to. Wherever there is a typical discharge, wherever there is anything out of the ordinary in a woman of a carcinoma age, that is a case for careful clinical study. Then, when in doubt, or where there is none, resort to the microscope, and if it confirms our diagnosis we can be absolutely certain of our convictions.

The surgical aspect of the subject is a weak one. We have done our best in a general way for carcinoma. I am certain that on the microscope must hinge the final diagnosis of these cases, especially where there is doubt. The negative factor is often greater than the positive factor. Within the last three months I have had two cases, in one of which, at least, from the clinical standpoint, no man could say it was not a carcinoma. The woman was 39 years old, had had periodical hemorrhages for several months, and had had a carcinoma of the breast. The first curettage showed areas that were suspicious, but I felt safe and waited three or four weeks for a recurrence of the hemorrhage to again curette so as to be absolutely certain before making a major operation. A second curettage absolutely showed the benign nature of the case, a simple inflammatory condition of the endometrium. Since the last curettage, five months ago, there has been no hemorrhage. The positive factor is the confirmation of the diagnosis through the microscope. The negative factor is the ruling out in just such cases as this. Many a woman will have her uterus removed if we are guided solely by clinical symptoms. I have never seen a single instance where Dr. Cullen was mistaken when he said that a certain case was carcinoma. I have seen cases where he was in doubt, but in those cases the carcinoma was so little that it was better to wait two or three weeks and then be able to say positively that this is carcinoma. If it is a benign tumor you can let the woman go with a simpler operation.

DR. E. G. ZINKE, Cincinnati, Ohio—Dr. Baldy's paper deserves praise for the manner of its presentation rather than its contents. There is plenty of room for just criticism. I want to limit myself to the consideration of two points: The question of early diagnosis, and the curability of cancer of the cervix. If Dr. Baldy's description of the early symptoms of cancer is correct, then I have never known what the early symptoms of cancer of the cervix are. The symptoms given by him mark an almost hopeless condition. The early diagnosis, in the majority of cases of cancer of the cervix, is exceedingly difficult; and it is for this reason that these cases come to us, usually, when too late. I saw a striking example, in 1891, in Chrobak's clinic in Vienna. A well-nourished, rosy-cheeked woman, aged 29, was brought into the clinic one day, and, after the professor had made an examination, he asked that the patient be taken out of the room. He then turned to his audience and said: "Gentlemen, I am sorry to say that this poor woman is hopelessly lost to the ravages of a carcinoma coli." The symptoms present in this case would not have warranted the suspicion even of the existence of this disease.

Several years ago I saw three women in one year (aged respectively, 23, 26, and 27), every one of them seemingly a picture of health, yet all hopelessly lost to cancer of the cervix. They were being treated for irregular menstruation, menorrhagia, metrorrhagia, etc., by their physicians. They did not suspect malignancy. These cases were reported, at the time, to the Cincinnati Obstetric Society, and published in the *Journal of Obstetrics and Diseases of Women.*

As to the possibility of curing these cases: I am convinced that they can not be cured unless the disease is removed by the knife in the earliest stage. Occasionally a patient, advanced in years, recovers even though the disease was extensively present. Carcinoma coli seems less violent and rapid in its progress when it occurs in advanced than in early life. An early diagnosis of cancer of the cervix is only possible when examinations are made promptly and thoroughly in every instance when complaints or irregularities point to the internal genitalia for their site or origin.

I believe in the curability of cancer of the uterus. The disease must, however, be attacked early and completely removed. I have seen good results follow the removal of the uterus in seemingly hopeless cases. Too many cases are abandoned as incurable. Every case should be treated until the last.

DR. EMIL RIES, Chicago—The statistics which Dr. Baldy attacked, teach a very eloquent lesson, and the way Dr. Baldy has disfigured them and juggled with them in order to fit them into his logic is astonishing. He starts out to prove that carcinoma of the cervix is incurable, and then figures on cases that come to the hospital when they are already incurable. He mixes up the incurability of cancer if left alone, with the incurability if operated. Of course, those cases not operated are incurable; they are lost; everybody admits that; no one ever said they were curable. If he uses those statistics he can only take those cases that were operated. That 15 or 20 per cent. of the cases are operated and survive for a time, merely proves just what that means and no more. But to take into consideration the cases not operated, and to attempt to prove with them that cancer is incurable, is an injustice. The injustice is the more severe because it strikes a man and a work which are worthy of the highest praise. Cullen's work on cancer of the uterus is excellent because it teaches the importance of laboratory work in spite of Dr. Baldy. Every modern man must subscribe to what Dr. Cullen says concerning laboratory methods and the necessity of the microscope in the early diagnosis of carcinoma. The man who does not agree with him is antiquated.

The doctor fails to take into account that there is a new operation which proves the cure of carcinoma to be possible, has proven it to a certain extent already, and is going to prove it still more in the future. It also explains why such a large number of cases which are operated on under the old methods have recurred. I speak of the method which I had the honor

of proposing six years ago, and which has been followed in Europe as well as in this country and Canada. This method consists of the complete removal of the regional lymphatic glands, together with the broad ligaments, round ligaments, utero-sacral ligaments, tubes, ovaries and uterus. When I proposed this operation I suspected that the glands would be involved early in carcinoma. Most gynecologists teach that in carcinoma of the uterus the glands are not infected early. They know nothing about it, because they have not examined the glands. Very few men have; Cullen is one of them; Wertheim, of Vienna, is another, and I have examined a few. A number of men have examined these glands but have found no carcinoma. Suffice it to say that those who have not found carcinoma have not examined all the glands or they would certainly have found the carcinoma.

As to results, Wertheim has operated on fifty cases, but he went far beyond my indications. His mortality from the operation has been high, therefore he comes back to what I have always said, limit the operation to the early cases, as it gives you a much better chance of curing the patient completely. What is the result of all cases operated on in the last two years? Not one has recurred. We all know that recurrence takes place in the majority of cases within six months. I have operated on a number of cases, the oldest over four years ago, and it has not recurred. I saw the patient a month ago and she is well. The results of the Johns Hopkins operators in this work are not valuable. I do not know whether their cases have recurred nor is anything known about the glands in those cases. In Wertheim's cases and in mine, the glands were carefully examined.

The objections to this operation are first, high mortality. The mortality is about 20 per cent. in the hands of skilled operators. What is the mortality without the operation? Dr. Baldy says 95 per cent. If you want to give your patient a chance, operate on her. It has been said that you can not remove all the glands and connective tissue. That is a mistake. It can be done if you keep at it. Practice the operation on the cadaver before you do it on the living. Learn the anatomy perfectly and then operate. You can clean out the pelvis as completely as you can the axilla. It has also been said that these glands may not be carcinomatous. My reply is that the case which has been examined thoroughly and which did not contain carcinoma, is still to be shown, but the cases in which the uterus was freely movable and the carcinoma small, where the case appeared to be a favorable one for vaginal removal, and where the glands were not enlarged but did contain carcinoma, are cases that have been shown by Wertheim and myself.

The last objection is that the carcinoma might be beyond the glands so that even if we removed the glands we did not remove the entire carcinoma. That is true. If the carcinoma is in the liver we can not remove it, but by removing the glands you give your patient a better chance for a complete and radical cure.

DR. E. E. MONTGOMERY, Philadelphia—We should welcome anything that throws light on this subject, whether through increased clinical knowledge or increased observation with the microscope; as yet we know little about the progress of carcinoma. There are cases in which the disease has extensively involved the cervix and where it is questionable as to the wisdom of an operation. I have seen cases where I have hesitated, but removed the uterus nevertheless. One of the patients is living after six years, and another two years, without any recurrence in either case. I have seen other cases in which there was apparently but little involvement and in which I looked forward to a most favorable result. Within six months after the operation the patient would have a recurrence of the disease and die.

The importance of an early diagnosis has been impressed on us, and I fully endorse this; yet there is no means of determining the early presence of carcinoma. The recurrence of hemorrhage, the presence of a foul discharge, the existence of pain, not infrequently occurs after the disease has made great progress and has extended so far that even a radical operation offers but little hope. I recall a case in which there was nothing to indicate the existence of a malignant disease, and yet the cancer had passed through the cervix. The external os looked healthy, but the cervical wall was infiltrated. I operated, but the disease recurred in the vaginal wall in different places, affording an opportunity for seven operations during the last three and a half years, the seventh resulting fatally. I repeat, therefore, that any means which affords us increased knowledge with regard to the development of cancer of the uterus, whether it comes through the microscope or through clinical observation, is welcome.

DR. G. B. MASSEY, Philadelphia—In selecting an operation for cancer of the cervix we should bear in mind the progress that has been made in the determination of the causes of cancer. This is now practically established to be a protozoon, a low form of animal life. That fact should direct your attention to the method of operating which I have referred to before, by which the dissemination of the oxychlorids of mercury in the midst of the growths causes immediate necrosis. It is a major operation and is done under anesthesia. Of course, certain risks are run because of the separation of the eschar, but there is no immediate risk because of the absence of hemorrhage. I have one case of cancer of the cervix to operate upon in which there has been no recurrence after about five years. In another case I obtained palliative results lasting six months. It has also been used as a palliative measure in two cases that were evidently inoperable. It relieved the pain and stopped the hemorrhage and odor, but did not save the life of the patient.

DR. J. WESLEY BOVÉE, Washington, D. C.—I think that Dr. Baldy is correct in saying that this disease is incurable. We must all admit that the ultimate mortality rate is very high. I would not, however, take quite so gloomy a view of it as he does, nor am I willing to forget the microscope as a diagnostic measure. I always required that these cases should be early ones, and a case does not need to be much advanced for me to throw it out. If we were all to follow that line we would have better results. I have done fifteen radical operations along the line mentioned by Dr. Ries. I did fourteen without a death, and the fifteenth and last case died on the table, so that the primary mortality rate is not any higher than that of ordinary abdominal work. I do not know whether we can go deep down in the pelvis and remove all the glands. I begin above, ligating the ovarian vessels, slitting down along the ureters, separating it down to bladder, ligating the uterine arteries near origin and cleaning out the pelvis as well as I can. I remove all the appendages, the ligaments, the uterus and the vagina down to the vulva; dissect out the glands, etc., and pull them out from below, following the plan of Werder. I do not know whether I remove all the glands, but I am sure that the method gives better results than any other. Thus far I have had two recurrences, but it takes time to determine whether we will have as many recurrences from this method as from the others. Certainly they are fewer compared with other procedures for the same amount of time.

DR. GUSTAV KOLISCHER, Chicago—Dr. Baldy"s manner of handling statistics is perfectly correct. Last year, Winter used the same statistics for another purpose, and this year he made a similar report which shows that the figures mentioned by Baldy are absolutely correct. In cases where a carcinoma of the cervix must be dealt with, the best operators do not have a better percentage of definite cures than 5 per cent. Most of our statistics are absolutely useless because they do not distinguish between a carcinoma of the cervix, the intermediate portion and the vaginal portion. We know that all cancers of the portio are relatively harmless; in fact, statistics show that they achieve about 20 per cent. of cures. All these cases of cancer of the cervix are cases in which we can get better results than 5 per cent.

I think Dr. Baldy was carried a little too far in denouncing the microscope. Even masters of microscopy admit that there are a great many cases in which they are absolutely unable to decide whether or not there is a carcinoma. If we have a case where the woman has hemorrhages and is losing flesh, and if the microscopist who examines the scrapings which we have obtained by curettage, tells us that he is not sure whether or not

there is a carcinoma, are we going to wait three or four months until he is able to decide positively? By no means, we should at once do a hysterectomy. Whether our results will be improved by abdominal operation or vaginal operation, can not be decided on at the present time. Wertheim and others report that in a great many cases the glands are infected. Men like Fraenkel, and others, say that in cases of carcinoma of the portio the glands are rarely ever involved. The only statistics which are valuable, those of Wertheim, are too small to decide on this question. He has only 49 cases, and in 15 the perimetrium was not examined at all. Ten years ago I gathered 250 operations for carcinoma of the breast, and it showed that cleaning out the axilla had nothing at all to do with the results. The results improved after we began the removal of the pectoralis. Baldy's outlook is certainly a very gloomy one. If we make a distinction between carcinoma of the portio and carcinoma of the cervix our results are certainly better. If the gentleman stated that he cured hopeless cases, I am unable to see how he did it. Hopeless cases are inoperable cases and can not be quoted. There is another point in which I think Dr. Baldy was misquoted; he said carcinoma of the cervix was incurable and that we have to remove the whole organ.

DR. FREDERICK HOLME WIGGIN, New York City—We are all under obligations to Dr. Baldy for calling the attention of general practitioners once more to the primal importance of thoroughly investigating and determining the cause of the trouble in every case which comes under their observation of a woman who complains of suffering from menstrual irregularities tending to an increased loss of blood, regardless of her age; even if she does not also complain of having pain in the region of the uterus or of a foul smelling discharge. It should be constantly borne in mind that these last symptoms instead of being indicative of the early stages of malignant uterine disease are those of the late or inoperable stages of the disease. If we are to have a lessened mortality from this fearful disease and better results than are at present obtained from radical operations performed for the relief of patients suffering from malignant uterine disease, the condition must be recognized early and the surgeon called in and allowed to operate without delay. During the last few years I have had a large number of patients referred to me suffering from this disease where it had progressed to a hopeless condition from an operative point of view, while they were under the care and observation of their family physician; he had really paid little or no attention to their complaints, had made no local examination till long after the patient had repeatedly called his attention to her troubles; the physician satisfied himself with writing a prescription for some simple medicine or ointment for piles, especially when the patient called attention to the fact that her nightgown was often slightly stained with blood in the mornings, or was told in the same offhand way that her trouble was due to change of life, and that if she would only be patient all would come right of its own accord. When these patients finally succeeded in getting their physician to examine them, on which they said that they did not wish to insist too strongly for fear of being considered immodest, he found much to his consternation evidence of advanced malignant disease too late for radical operative procedures to be undertaken with much hope of permanent benefit, whereas if the patient had only been examined carefully when she first complained, the condition might readily have been recognized and permanent relief afforded.

This is certainly a sad state of things, and should not be allowed to continue. Physicians should not satisfy themselves and their patients by prescribing simply a remedy to hide the symptoms complained of, but should study them, and by careful investigation seek for their cause; they should cure their patients by having the cause removed when possible, and make a proper charge for their then really valuable services. In my experience many of the careless acts of physicians in regard to their patients is due not to lack of knowledge, but to the ridiculously small fees which they are in the habit of receiving for their services; consequently they feel that they can not afford to give much time for the consideration of the case of any one patient.

In regard to the removal of tissues in cases of suspected malignant disease for the purpose of confirming the diagnosis, I have in the past, several times seen bad results follow it, especially where there had been some delay in getting a report from the microscopist, for even during that short interval of time, owing to the slight operative interference, the case had passed from an operative to an inoperative stage. Therefore, I believe it wisest as a rule, where the history and clinical evidences of the disease are fairly clear, to operate first and then to have the microscopical examination of the diseased organ made afterwards.

DR. J. M. DUFF, Pittsburg—Our discussions are certainly for the benefit of the general practitioner as well as for that of the specialist. The idea that pain and hemorrhage are always symptoms of carcinoma of the uterus is certainly false and misleading. Some of the worst cases I have ever seen did not have any hemorrhage until very late, and others equally as bad did not have any pain. I know of one case where the woman did her housework until the evening before she had a severe hemorrhage, ending in death. If we lengthen a woman's life by operating, we benefit her. But if we do not get the cases early, we can not expect to obtain as good results, even in the lengthening of life. It is our bounden duty to always seek for the cause of trouble when a patient comes to us. Let us not be satisfied, until we find out what is the cause of any symptom. This will very frequently lead us to an examination of the genitals and there you will find the seat of disease. Very frequently that disease is cancer. In such way we can get hold of it early. Ordinarily, as the cases come to us from the general practitioner, the microscope is really not needed so far as diagnosis is concerned, because the clinical findings are sufficiently prominent to give us positive assurance as to the existence of cancer.

DR. BALDY, closing the discussion—It is impossible to answer all the criticisms of my paper. Dr. Kolischer has answered so many of them so well as to have almost taken the words out of my mouth. Dr. Clark objected to my paper for three reasons: 1, because I did not judge from a pathologic standpoint; 2, because I did not bring forward my own statistics and base my paper on them; 3, that Cullen's book dwelt fully on the clinical aspect of cancer. If Cullen dwelt on the clinical aspect of cancer in his book, he himself does not know it, because he apologizes for not having done so in unmistakable words and anyone reading the book will fully appreciate this fact.

As to my own statistics, my paper is based on them, and Dr. Clark himself has heard me state in public discussion a number of times that I do not know but the rare case of cancer of the cervix that I have ever seen that was alive to-day. These two objections are therefore incomprehensible to me. I fail also to understand the objection as to my not judging from a pathologic standpoint, as I began to study that aspect of the question long before Dr. Clarke graduated in medicine.

As to the microscope work being valuable in its place, I have not one word of criticism to offer. No man who will read my paper in his leisure hours, will find any criticism of laboratory work or the microscope. Most of the speakers have misunderstood the entire drift of my paper. Dr. Bovée misinterprets the meaning of my use of the word "fad" in connection with the microscope. One can use words in order to bring out a certain meaning more strongly without condemning a method. One's opinion must not be judged by a single word, but by the whole of what he says. It is a dangerous thing to quibble in literature, as we are frequently caught by it. Of course, the microscope is the final test, but who will use the microscope if they have not first made the clinical test. What do these gentlemen mean?

To curette every woman who consults them and to examine the scrapings? They will hardly dare to go beyond doing this to suspected cases. I believe that a man's clinical judgment is better than a doubtful microscopical report in nine cases out of ten. Dr. Clark informs us that Cullen can always diagnose cancer with the microscope, and he cites a case in which the microscope showed a cancer, etc. The best pathologists differ from this opinion and my experience with all I have any knowl-

edge of is that they differ greatly and are often mistaken. I had a patient come to me recently, I curetted and sent the scrapings to a prominent pathologist. He called it cancer. I sent it to another, who said he could not see anything suspicious of cancer, and advised me to wait three months. I concluded not to wait, so I performed a hysterectomy, I took the specimens to the pathologist who then admitted that it was cancer. The pathologist is no better than we are. He makes the same mistakes and has the same weaknesses.

I deny that I have juggled statistics; it is perfectly fair to consider cases described by other surgeons, as I have in my paper. The juggling is by the other man, and men usually object to having such manipulation exposed. I have my compliments as yet to pay to the gentleman who talks of removing the pelvic glands in operation for this disease. Dr. Ries admits 20 per cent. mortality in his operation, an enormous mortality, and that in the hands of an expert. What would it be in the hands of an inexpert? Consider a moment, where does a cancer of the cervix recur? It invariably recurs at the site of the wound where the cancer was removed. It does not recur in the glands that are inches away from the uterus. That is the rare method of recurrence. You might just as well remove the glands in the neck and axilla. That is common sense and practice versus theory. The proposition to remove the glands is an absolute impossibility. The surgeon does not live to-day who can remove all the glands in the pelvis of any living woman. I have thrown out that challenge before and I throw it out again and it will be only a short time when every one of these gentlemen will admit that what I say is true. It is all theory, but it is all wrong practically.

I fail to understand my friend Carstens. He has built up his own theory, and then knocked it down; but it has nothing to do with my paper, as I have said practically what he says. He misunderstands the drift of my paper entirely. If he did not grasp the fact that I was pleading with the general practitioner to learn clinical diagnosis, and with the teachers to teach the general practitioner to be able to diagnose these cases early, then my paper, as far as he is concerned, has been an utter flat failure; and I suspect from your discussion, most of you who have discussed the papers, are as much at sea as Carstens. That was the only object I had in presenting the paper. Teachers should teach good clinical medicine and not too much microscope, so that the general practitioner would be able to suspect these cases, and then give the microscopist a chance. It is the only hope we have for the future as far as this disease is concerned.

ACUTE MASTOIDITIS AFTER SUBSIDENCE AND WITHOUT RECURRENCE OF TYMPANIC INFLAMMATION.*

HIRAM WOODS, JR., M.D.
BALTIMORE, MD.

The symtomatology of acute mastoiditis is so generally known that it is almost useless to write of it. Two modes of onset are most common. While otorrhea continues, or increases in amount, mastoid symptoms develop. This, in my experience, is the rule. Less frequently otorrhea ceases, perhaps gradually, more commonly, suddenly, with simultaneous lighting up of mastoid disease. Politzer, in his text-book, says that only once has he seen suppuration in the tympanic cavity cease, while the symptoms of inflammation in the mastoid continued undiminished. And again he states: "Occasionally cases are observed in which, several days after local symptoms disappear, abscess formation in the mastoid process is manifested." In the clinic of the Presbyterian Eye, Ear and Throat Hospital of Baltimore, so far as I find recorded, there have been only two such cases in twenty-two years: one, a child three years ago, where there was no otorrhea; the other a woman, during the past winter, in whom mastoiditis required operation three weeks after recovery of all ear symptoms and restoration of good hearing. Both were treated by my associate, Dr. J. F. Crouch. The following three cases have come under my own care within the past two years:

CASE 1.—Anne W., 8 years of age, was referred to me Dec. 14, 1899, by Dr. I. E. Atkinson of Baltimore. For six days the child had been somewhat deaf, with occasional pain in the right ear. For three days there had been a discharge. There was an indefinite history of aural trouble two years previous. Prior to the present attack the child had had coryza. She heard the watch at three inches in the left; contact, right ear, conversational voice about two feet. Stiff neck, the head inclined to the right, was marked. There was a small perforation in the lower anterior quadrant of the membrane, while the antero-superior angle was congested. There was no pain. Politzerization was used in the office, and the ear irrigated with warm boric acid solution every third hour for two days. On the third day there was no otorrhea, and neither spontaneous nor pressure mastoid pain. Temperature during the entire course did not go above 100. On December 26, nine days after otorrhea had ceased, the little girl came to my office complaining of pain in the right mastoid region. There was tenderness on pressure. Torticollis was still present. There was no redness or swelling of the mastoid. The ear was dry, the drumhead showing no evidence of renewed tympanic disease. My voice in loud whisper was heard at 20 feet. Rest, cold locally, and calomel were employed. On the 27th there was no pain. But for the stiff neck and general lassitude the child seemed well for the next three days. During the night of the 30th, she awoke with pain referred to the mastoid. On the 31st, the canal, membrane and tympanum showed no evidence of trouble. The mastoid was tender, red, and hearing the same as four days previously. The next day, Jan. 1, 1900, I operated under chloroform. Necrosis was found on the cortex, near the tip, leading into a shallow but vertically large cavity containing only a drop or two of pus in the lower part, and filled for the rest with granulations. This whole cavity was not over a quarter of an inch deep. Its floor was exposed dura, covered with granulations. The cavity was cleaned carefully. When I began to work up into the antrum and tympanum, I found the latter apparently shut off. I refrained from opening into these cavities because of the disappearance of tympanic symptoms nine days before, improved hearing in the ear since otorrhea had ceased; shallowness of the process, exposed dura, and, finally, Politzer's authority for the correctness of not entering the antrum as a routine in acute cases. Recovery was uninterrupted. Torticollis was gone in three days, and after three weeks the ear had normal hearing, with the wound entirely closed.

CASE 2.—Harry G., 14 years old, was brought to me by his father, a physician in one of the counties near Baltimore, on February 23 last. The boy's history was sore throat, for nine days, with earache on both sides for about half this time. There had been slight left otorrhea, and there was still a little moisture in the left canal. The malleus plexus in each drumhead was injected, Shrapnell's membrane showing the degree of congestion usually seen in a subsiding acute otitis media. The right membrane was intact, the left had a nearly healed perforation in the anterior-superior angle. Neither aural nor mastoid pain was present. Temperature was 100.6; the pulse 90. Hearing was reduced to moderately raised voice at four feet, and watch on contact. The boy was put to bed, given a dose of salts, and a few drops of a solution of cocain and atropia instilled into the ear. In twenty-four hours the temperature was normal, the ear free from discharge. To March 4, eleven days, he was given politzerization, and astringent throat applications. Then there was normal appearance of the drumhead, and hearing had increased to whisper at ten feet, watch R. 36/36; L. 24/36. He now returned to his home,

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with instructions to come to me again if he developed ear pains or fever. On March 16, twelve days after his return home, he was back with deep-seated pain in the left ear for two days. There was no evidence of relapse of tympanic inflammation, but the mastoid was painful to pressure. Temperature was 99.5. He was put to bed and a saline purgative administered. No local application was used. The next day he was comfortable, and tenderness gone. On the 19th, he was about town, and came to my office during the morning to say he was all right; apparently he was. Early in the afternoon he returned, having an epistaxis which he could not check. I sent him to his aunt's house, where he was stopping, and to bed. That night the temperature reached 100. From this time to the 22d, when I operated, he developed typical symptoms of acute mastoiditis. My friend, Dr. Harlan, saw him the morning of the 21st, and it was decided to apply cold. It had no effect in twenty-four hours. Hearing remained as good as it had been two weeks before. Such part of the drumhead as could be seen for the bulging postero-superior canal wall was normal. On operation at the Presbyterian Eye and Ear Hospital, the mastoid cortex was found necrotic, while, as in the first case, the interior of the process was converted into a large cavity, containing pus and granulations. Here, as seen also in Case 1, the process was shallow, not over a quarter of an inch deep. The sinus was exposed by necrosis of the inner mastoid wall, with pus and granulation tissue on its surface. Entrance to the tympanum was reduced to a thread-like passage, which was enlarged, but no further disease found. After operation, the wound was closed by suture, which held throughout except at the junction of the vertical and a horizontal back incision made to secure more room. Here the wound opened, but healed by granulation in three weeks. Early in May the boy had normal hearing.

CASE 3.—William D., 14 years old, was first seen Jan. 24, 1900. For a month the boy had been ailing from colds, and under the care of a homeopath. Ten days before I was given charge of the case, there had been left earache, followed by otorrhea. There seems to have been pretty continuous but mild pain for three days, subsiding as the otorrhea increased. On the 20th, one week after the first symptoms and three days after the disappearance of pain, the discharge ceased, with onset of deep ear pains and left torticollis. He had been kept quiet by opiates and hot applications. I found the ear dry, a healed perforation in the membrane, up and back, no bulging, slight hyperemia of the malleus plexus moderate mastoid pain, increased by pressure. Temperature was 102; pulse 84. Hearing for watch, 14/36, for moderately raised voice, ten feet. Cold was applied during the night. The next morning, with temperature 101, pulse 80, and little or no pain the boy was removed from his home in the county to the Eye and Ear Hospital. After twenty-four hours in bed, and a calomel purge, there was marked improvement. The temperature fell to 99.2; the mastoid was free from pressure pain. There was some earache, apparently accounted for by the hyperemic malleus plexus, and a small tender area in the cartilagenous canal. Under chloroform the membrane was incised along the posterior border of the malleus handle, and the sensitive canal surface opened. On the 27th, the day after incision of the drumhead, evening temperature was 101, and on the 28th, 100. The pulse ranged from 70 to 76. Save for these two elevations, the temperature varied from normal to 99.4, there was no pain, the neck rigidity subsided, and hearing improved. On the 31st he went home apparently well. Two days later—a week after incision of the membrane—evening temperature, taken by the boy's mother, was 101, pulse 80. The next evening's record was 103.4, pulse 90. This was attributed by the family to indiscreet eating, and salts were administered. On the morning of the 4th, there was a drop to normal temperature and the pulse was 62. At the same time left hemicrania, with special reference to the supraorbital region, was complained of, and the past three days' record sent to me. I visited the boy immediately. He was lying on his bed, feeling weak, and suffering from left headache. Temperature was still normal, pulse 66. Hearing for voice, speech and tuning-forks was normal. There was neither spontaneous nor pressure pain in the mastoid. There was no otorrhea, and but for a slight hyperemia at the upper end of my incision in the membrane, the latter was normal. The eyes presented nothing of interest. Functionally and organically they were faultless. Tonic doses of strychnia were ordered, and the headache eased. From the 4th to 7th there developed slowing of the pulse, with occasional intermission. It reached 52 on the 7th, temperature ranging from normal to 100. Headache, confined to the left side, persisted, most severe in the supra-orbital region. The afternoon of the 7th, I found the left pupil two-thirds dilated, with positive but sluggish contraction to light. Accommodation was unaffected. From this to the date of operation—16th—Dr. M. Thomas, neurologist at the Johns Hopkins Hospital, and consulting neurologist at the Presbyterian Eye and Ear Hospital, was associated with me. We watched the case daily, becoming more and more convinced that we were dealing with otitic intracranial disease. The head, eye and ear symptoms remained unchanged. Temperature ranged from normal to 100.5, once, on the 13th, reaching 101.5. The pulse fell as low as 46 on the 9th, but averaged about 50. With the temperature of 101.5 recorded on the 13th, the pulse rose for a little while to 80, but, with the fall of temperature to normal on the 14th, fell to 52. The boy grew weaker each day, and nothing definite developed. The ears seemed absolutely normal. On the 15th we moved him to the city in order to be prepared for operation, if indicated. Early the next morning, with Dr. Thomas's approval, I submitted to the parents the question of exploratory mastoid operation. The apparent recovery of the ear disease, and the significance of the very indefiniteness of such symptoms after middle ear inflammation were explained. But the transient signs of mastoiditis and neck rigidity, present when I was first called, were the only positive guides we had. The boy was failing, and we ought to find his trouble if possible. I operated the same afternoon. It seemed to me that symptoms pointed, so far as they could be interpreted, to an epidural abscess. Headache, slow pulse, slight hyperpyrexia and stiff neck indicated, more or less clearly, meningeal irritation. But we did not account for the left pupillary dilatation, nor, with our present ideas of causation of epidural abscesses—contiguous bone necroses—did the local conditions indicate the probability of finding a necrotic area to guide us. Sinus thrombosis and leptomeningitis were hardly more than possibilities. We had waited for development of symptoms of cerebral abscess, but they were still, in our opinion, too vague to justify exploration unless bone necrosis showed the way. I had in mind the remark Dr. Knapp, in his short but comprehensive article in "The American Text-Book," by De Schweinitz and Randall: "Meningeal irritation is * * * difficult to distinguish from intracranial inflammation. The course will show; and if on account of the persistence of alarming symptoms an operation is decided on, the condition exposed by the chisel will lead to the diagnosis." My intention was to open into the mastoid antrum and tympanum and to stop there unless dead bone told me where else to go. The process was cellular, and no difficulty was experienced in reaching the mastoid antrum and aditus. As the probe passed into the latter there was a gush of clear fluid, which came out as though under great pressure. The opening to the tympanum was enlarged, and the bone found apparently healthy. Then attention was turned to the tip, and in a large cell here a little pus was found. I regret that no culture was made from it. A few hours after operation the temperature was 99.6, the pulse 75; it fell to 58 next morning, and then gradually rose to between 60 and 70 the first ten days, then remaining steady at about 76 until the boy was discharged. Temperature reached 100 during convalescence, but after the tenth day kept below 99. Headache disappeared at once, and the day after operation the pupils were equal. The boy was discharged from the hospital two weeks from the day of operation. He has been entirely well for fifteen months, and now has normal hearing.

An interesting question is, when did the mastoids become infected? In the second case there was no sign

of mastoiditis until twelve days after tympanic disease had disappeared. Of the other two, Case 1 had neck rigidity throughout. In Case 3 there was this rigidity at first, with sudden cessation of otorrhea, and simultaneous mastoid pain, disappearing in two days and never returning. Dench speaks, in his text-book, of neck rigidity in otitic meningitis, and mentions difficulty in turning the head from side to side as occurring in mastoiditis in children. In connection with temporary pain and later developments, in the last case, this rigidity probably meant mastoid involvement. If we add to it, in Case 1, the extensive destruction of the cellular structure and inner mastoid wall, found on operation, and the same condition found in Case 2, though there were no early symptoms, the probability is great that the cells were infected in the beginning, and inflammation progressed although tympanic disease subsided. My friend, Dr. Lee Cohen of Baltimore recently called my attention to reports by Zaufal[1] and Korner[2], of similar cases, due to infection from the diplococcus pneumoniæ. Both authors regarded the infection as having remained latent since the middle ear was first affected. In the last case meningeal irritation, or hyperemia, was probably the cause of the pupillary dilation, headache and slow pulse, all of which disappeared after evacuation of fluid held under tension in the antrum. Reflex influence from increased pressure suggests itself as a possible cause of symptoms. Friedrich gives a most interesting account of these reflexes in his book "Rhinology, Laryngology and Otology in General Medicine." Turning of the eyes toward the side from which sound proceeds is a well known reflex. Others mentioned, but which I have never seen, are nystagmus, ocular palsies and disturbances of pupillary action. He quotes a case of Lucæ in which ear syringing produced vertigo if the eyes were open, but not if they were closed. Cerumenous deposit has been known to cause nystagmus. In all these reflexes, however, the reflex course must lie in the vestibular, or possibly the cochlear, nerve. There is more difficulty, he says, in tracing it along the cochlear. Such reflex is always bilateral. In my case but one pupil was involved, and there was no symptom of larbyrinthine trouble. The case is interesting, apart from persistence of the mastoiditis, after tympanic disease subsides, as showing how mastoiditis can stimulate more serious lesions or, possibly, produce dangerous meningeal hyperemia.

As to the use of cold, in these three cases it was employed and in two its use was apparently followed by benefit. I was taught to use cold years ago, and have done so frequently. Yet, I doubt whether I have even seen a case of threatened mastoiditis "aborted" by it which, looked at in the light of other experiences, would not have subsided without it. In cases in which I have subsequently operated, I believe that all obtained from the faithful and persistent use of cold for several days was masked symptoms. Dr. J. O. Tansley presented a most instructive paper on this subject to the American Otological Society, in 1899. His conclusions are about the same as experience has taught me, with the addition of increased trouble from hemorrhage and difficulty in distinguishing healthy from diseased bone during operation, slow recovery, and demonstration of the impossibility of securing a sufficient degree of cold to kill organisms in the mastoid. He thinks cold masks symptoms. I am inclined to agree with him.

842 Park Avenue.

1. Prager Med. Woch., 1889.
2. Eitrige Erkrankun des Schlafenbeins.

DISCUSSION.

DR. E. B. DENCH, New York City—I think the histories of the cases very unique. As to the question of infection, I think that was coincident or followed closely upon the middle ear trouble and the germs were simply not sufficiently virulent to develop until after the subsidence of the trouble in the middle ear. I agree with the Doctor in regard to the use of cold. I recall two cases that I saw after my return from a vacation. In both of these cases it was supposed that the inflammation had been aborted by the use of cold. In one case an operation could not be done because of pneumonia, and after the pneumonia was over the symptoms had apparently disappeared. When I returned I opened a brain abscess. In the second case, everything went along well until several weeks later, and I then operated and found an epidural abscess about the size of a pigeon's egg. Both cases had apparently improved by the application of cold, but both afterwards required operation.

DR. HERBERT HARLAN, Baltimore—Dr. Woods refers to closing up the wounds and allowing one small point to heal by granulation. My rule has been to close up these cases, and I have yet to regret adopting that procedure. If we do not close them up so absolutely tight as to make it difficult, we have a soft blood clot, and if suppuration does take place it breaks down one or two stitches and the dressing can be carried on very nicely. I would refer to one case especially, a little girl I was asked to operate upon; it was an acute, violent case, with pain, swelling and pus. The operation was a complete one. On the tenth day it had healed up completely. She was then perfectly well and she asked permission to go back to school the following Monday, which was just two weeks afterward. The scar was scarcely perceptible. I have had a great many cases heal up completely and with almost no perceptible scar at the end of two weeks. I had the pleasure of seeing the writer of the previous paper, Dr. Dench, operate in New York, and I would make the suggestion that he close up a half dozen or so in this manner, and I am sure he will be very well satisfied with the method. In the few cases in which you do not get complete healing you have only a comparatively small opening and the final deformity is certainly less. The cases that you treat in the other way require a long time, and do not show so little deformity. The sinus cases, of course, have to be packed. But where these cases can be closed up I believe it is advisable to do so.

DR. DENCH—Will you kindly explain the technique of that operation? Do you allow the wound to fill with blood?

ANSWER—Yes.

DR. DENCH—You simply allow it to fill with blood before you suture?

DR. HARLAN—No; I just suture it up entirely independent of the inside, but it always does fill up with blood. In most instances I make a cross incision so that I have a T-shaped wound. It simplifies the operation and gives you more room to work in. If one stitch does break down it usually does so at the branches of the incision where you did not perhaps have complete coaptation. I use sometimes silver wire and sometimes silk, but I rather prefer the silver wire.

QUESTION—Does the discharge cease?

ANSWER—In most cases it does, and you do not have any more discharge from the ear.

QUESTION—Is it necessary to have the discharge cease from the ear to have perfect healing in this way?

ANSWER—No; I have known it to continue for a week or two.

DR. EMIL AMBERG, Detroit—I would like to call attention to the abuse of the nasal douche, and I think we can do much towards preventing middle ear disease by calling attention to the disagreeable results following the use of the nasal douche. Some general practitioners, especially when treating children, use it too frequently.

DR. GEORGE C. STOUT, Philadelphia—The Doctor speaks of fluid being let out; what was that, blood?

ANSWER—I wish I knew, Doctor. It simply made a gush and escaped. I think it came from the mastoid antrum.

DR. CORNELIUS WILLIAMS, St. Paul—The case mentioned reminds me of the case I first operated upon. A boy 6 years

old had mastoiditis and died a couple of days afterward of meningitis. It occurred to me that this fluid might have come from the cranial cavity, because I can not see where else it could come from.

DR. HIRAM WOODS, in closing—In regard to the shutting up of these wounds, after Dr. Blake's method, I think he makes it pretty clear that it depends largely upon the thoroughness of the cleaning, and if an area of infection has been left behind you are likely to have trouble. In the case I have mentioned, there was a large wound with a T-cut, and it all healed except a small area, a quarter of an inch in diameter, at junction of two cuts. That closed in two weeks, which is a considerable gain over the ordinary time. And then the wound is not one that can not be readily opened. At the Presbyterian Hospital we have treated several cases in this way. Some healed promptly and entirely; in others, there was some breaking down; in all there was a perceptible gain of time. Of course, the onset of high temperature or any symptoms of sepsis would indicate opening the wound. In regard to the use of the Politzer air-bag, I confess I am rather opposed to the orthodox teaching. In acute otitis media without evidence of fluid, without bulging of the membrane, but with hyperemia of the malleus plexus, I think one can do good with politzerization. I am quite sure I have seen the pain of otitis media relieved by application to the nasal passages of cocain, followed by antipyrin solution and gentle inflation of the middle ear. In cases recovering from suppurative otitis media, I invariably use politzerization. I read an article a few months ago in which the writer insisted that if those of us treating these cases would lose our Politzer air-bag we would not have mastoid cases. I can not agree with him. In regard to the question as to what the fluid was and where it came from, in my third case, I would like very much to be able to answer. It occurred to me, as the Doctor said of his case, that it might come from the cranial cavity. I curetted down until I came to apparently solid bone, and failed to find any necrotic area. The symptoms seemed to point to meningeal hyperemia produced by mastoiditis. What the fluid was I do not know, unless it was serum.

LEITER'S APPARATUS FOR THE EAR, MODIFIED BY AMBERG.*

EMIL AMBERG, M.D.
DETROIT, MICH.

The modified Leiter's apparatus, for the application of hot and cold water to the ear, is made of inflexible

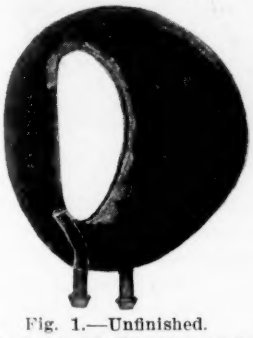

Fig. 1.—Unfinished.

Fig. 2.

Amberg's Modification of Leiter's Apparatus for the Ear.

material. The long lead tubing is avoided. The apparatus is slightly bent, adapting itself to the contour of the head.

Figures 1 and 2 fully explain the construction. The short tubes can be easily cleansed. Different sizes are required for different ears. The opening of the inlet is about twice as large in diameter as the opening of the outlet. For this latter idea I am indebted to the instrument maker, Charles Karlson, of Detroit.

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Laryngology and Otology, and approved for publication by the Executive Committee: Drs. Emil Mayer, W. E. Casselberry and J. N. Mackenzie.

THE PRESENT STATUS OF RENAL AND URETERAL SURGERY.

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SAN FRANCISCO.

The treatment of diseases of the kidneys by surgical means dates back as far as the tenth century when we find that operations were described which had for their object the removal of accumulations in or about the kidney. These operations were permissible only in cases where the disease had been progressing for some time, and where the evidence of the accumulations was plainly visible. During almost ten centuries very little progress was made, and it is only within the last ten or fifteen years that any marked advance has been made in the diagnosis and surgical technique of renal and ureteral affections.

The advance in surgical methods was due principally to the improved methods devised for the purpose of making accurate diagnoses. Until a few years ago we were unable to determine positively the presence of calculi in the kidney or ureter before operating, and even at the time of operation, calculi were overlooked which were found at the postmortem. This is now almost inexcusable, except in very fleshy patients, because we possess in the *x*-ray a means, not only of determining the presence of calculi, but also of showing their size and location. The best surgeons have reported cases in which they have cut down on the kidney in order to remove a supposed calculus, and have not found one, and on the other hand, cases have been allowed to drift along for years without operation because the symptoms were not sufficiently marked to warrant the diagnosis of stone, and the postmortem disclosed the fact that the individual might have been saved years of misery, and that his life might have been prolonged if a correct diagnosis had been made.

The following case illustrates the last statement:

J. V., aged 62, was operated on by me in January, 1899, for several perineal fistulæ with two openings into the urethra, the cause of which was ascribed to a fall on the perineum, which had occurred ten years before. The result was perfect, except that the stricture, which was the immediate cause of the fistulæ, had to be dilated every month or two in order to keep the urethra patent. The patient remained perfectly well until July, 1900, when he began to complain of pain in the right lumbar region, which was increased after any exertion. Examination disclosed absolutely no tenderness on pressure, and no mass could be made out on palpation. The pain was described as dull and aching in character, and did not radiate down towards the penis, but was located directly over the right kidney, at the back. Examination of the urine showed large quantities of pus and numerous streptococci. The reaction was acid and it contained an excess of uric acid. A diagnosis of pyelonephritis was made and after having treated the case for several weeks with urinary antiseptics—urotropin, hydriodic acid, etc.,—I advised operation to drain the pelvis of the kidney, and prevent, if possible, the extension of the disease to the other kidney.

The patient refused operation and the medical treatment was continued without definite result. For a week or two he would feel quite well, and then the pain would gradually become worse; and it was noticed that when the urine contained large quantities of pus, the pain would be very much less, and that, when the pus began to diminish, the pain would slowly increase. At no time was there any blood in the urine, and in spite of the fact that there were large numbers of streptococci present, there were neither symptoms of cystitis, vesical tenesmus, or frequent urination or pain during or following the passage of urine. The patient was suffering from mitral in-

sufficiency, and had had frequent attacks of articular rheumatism, and therefore I did not urge operation. He was able to attend to his work, which was clerical in character, until early in December, 1900, when he was obliged to go to bed on account of an attack which appeared to be multiple neuritis, at which time he suffered intense pain almost everywhere excepting in the region of the right kidney.

The temperature ranged between 99 and 104 F., pulse 120. After two weeks of this condition, he began to feel something in the right lumbar region, and I was able for the first time to detect a mass which appeared to be connected with the right kidney, and was tender on pressure. It was extremely difficult to palpate accurately on acconut of the thick abdominal walls, but as the temperature remained high and the urine contained pus in large quantities, I insisted on immediate operation.

A lumbar incision was made, skirting the anterior border of the latissimus dorsi muscle, while the right arm was pulled backward in order to bring this border as near the middle of the back as possible, thereby avoiding cutting through the muscle; and the lumbar fascia was then cut through at the anterior border of the retracted quadratus lumborum. This incision enables us to reach the kidney without cutting through any muscular tissue, but if it becomes necessary to obtain more room, we may do so by cutting through the abdominal muscles near their attachment to the crest of the ilium. This is necessary only when it is desired to reach the ureter, or when the abdominal wall is very fat.

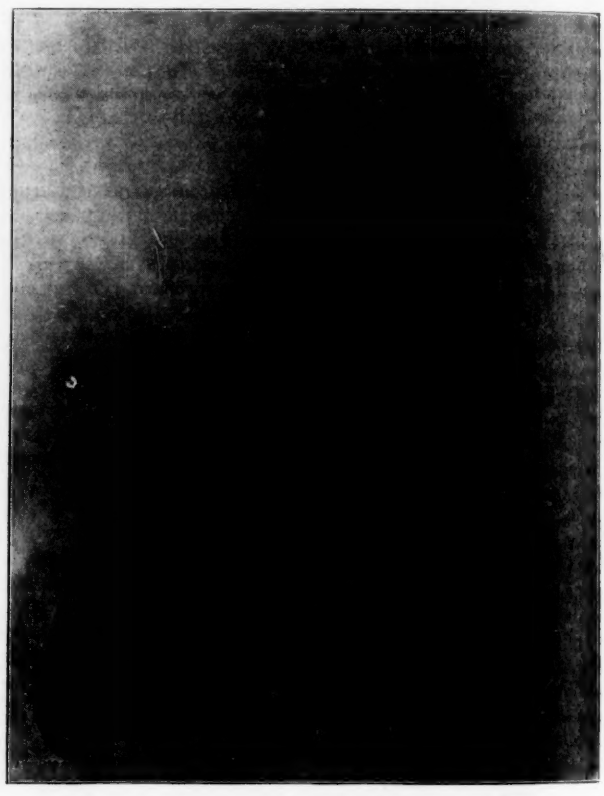
Calculus removed from kidney postmortem.

The kidney was found enlarged to three times its normal size and fluctuated as far as I could reach. It was incised at the presenting part and about half a pint of pus evacuated. The finger in the pus pocket did not reveal the presence of any calculus, and as the patient's condition did not admit of any extended exploration, drainage tubes were inserted and dressings applied. He rallied nicely from the operation and for three weeks appeared to be doing well, the wound discharging less and less and granulating satisfactorily. His heart suddenly began to act badly, increasing from 60 to 160 in a few hours, and he died just four weeks from the date of operation.

I was able to obtain the right kidney only, and so can not say whether the left kidney was diseased or not, but the right kidney presented a most interesting state of affairs. Projecting from the opening which I had made at the time of operation, was the end of a large calculus, which was evidently the cause of all the renal affection, but which had given little evidence of its presence. The calculus was nine centimeters long, three and a half centimeters wide at the widest point and a little over two centimeters thick.

The peculiar feature about the case is the fact that the patient had never had the slightest pain in the right side prior to six months before his death, although the calculus must have existed for several years. Cases of this kind illustrate the necessity of examining all patients for stone, who complain of pain over one kidney, or who have pus in the urine, which can be shown to be renal in origin.

Through the inventive genius of Dr. M. L. Harris we are enabled to collect the urine from either kidney separately, and to determine exactly the quality and quantity of urine which each kidney secretes in a given time. This invention is one of the most brilliant that has been made in recent years, as it places the surgeon in a position to know positively before operation whether his patient has a properly functionating kidney on one side, if he has any intention of doing a nephrectomy on the other. It is of much more practical value than the male cystoscope, because it can be used by any ordinary practitioner, while the male cystoscope requires extraordinary skill, and in cases where there is the slightest hemorrhage from the bladder or mouth of the ureter it is impossible to use it successfully. There are few if any conditions where the Harris segregator can not be successfully used.



Skiagraph showing calculus in pelvis of kidney.

In using this instrument, if we wish to be sure of having the elevator between the two catheters we must be careful to adjust it in position in the rectum before turning the catheters down, and to see that it is in the median line.

In the female the segregator is not so essential because we can catheterize the ureters directly by means of Kelly's cystoscope and catheters. This enables us not only to collect the urine from each kidney separately, but to determine the patency of the ureter in cases of renal calculus, and if any obstruction is noted, we can tell by coating the tip of the catheter with soft wax whether the obstruction is due to a calculus impacted in the ureter or not. This is determined by examining the coated tip with a magnifying glass after having rubbed it against the obstruction; if a stone is present, we will find that the wax is scratched, whereas if the obstruction is due to any other cause, the wax will remain smooth.

After determining the exact locality of a renal or

Showing loop of small intestine anastomosed between ureter and bladder.

ureteral calculus, it is comparatively easy to effect its removal. If the stone is in the kidney, it is best reached by cutting down according to directions previously given and bringing the organ outside, which can be done in all cases where the abdominal wall is not unusually thick. Even where there is a large amount of fat, the kidney may be brought in full view and the pelvis reached by making an incision through the kidney substance from a quarter to a half inch behind the median groove, being careful not to prolong it downward beyond the lowest point of the pelvis, otherwise we may have a urinary fistula which will be difficult to close. The hemorrhage is usually slight and may be controlled by pressing the renal vessels between the index and middle fingers while holding the kidney in position. It has been found that the incision through the kidney substance is less likely to leave a fistula than an incision into the renal pelvis.

The wound in the kidney should be sutured with catgut and provision made for drainage of the external wound. If a stone is found impacted in the ureter it may be reached either by the lengthened lumbar incision, or by the trans-peritoneal route, which will have to be used if the calculus is low down.

The ureter is to be incised longitudinally, the stone extracted, and the cut sewed with fine catgut. It is advisable before doing so to pass a bougie up into the pelvis of the kidney, and also downward into the bladder to be sure that the ureter is patent.

The following case is of interest in this respect:

W. W. sent for me to get relief from pain which had been gradually getting worse for several days. He located the pain at a point on the left side of abdomen corresponding to the place where the ureter crosses the brim of the pelvis, and stated that it occasionally radiated toward the end of the penis. He was unable to pass water and I withdrew it with a soft catheter which entered the bladder without difficulty, showing that there was no stricture of the urethra. The pain increased, and when morphine had no further effect on it, I used chloroform, and the patient was kept partly under the influence of this drug for hours at a time. A skiagraph was made, as the symptoms all pointed to a stone impacted in the ureter at a point where it crosses the brim of the pelvis, but the result was negative.

The condition was becoming desperate and I decided to operate. I opened the abdomen through the border of the left rectus and cut through the peritoneum over the ureter. It was found dilated to the size of the index finger, and was followed down to the bladder without finding a stone. I opened it with a small longitudinal incision, and passed a probe upward into the pelvis of the kidney, but was unable to pass it downward into the bladder. There was a complete obstruction of the ureter at its junction with the bladder, but no foreign body could be discovered after the most careful palpation. The opening in the ureter was closed with fine catgut, and the abdomen sutured in three layers.

A lumbar incision was then made and the pelvis of the kidney opened, in order to allow the exit of urine, otherwise the pressure of urine in the ureter would have caused leakage at the point of suture.

The kidney drained a large amount of urine for two weeks, when it was noticed that it gradually lessened, at the same time the amount passed per vias naturales correspondingly increased, until the kidney ceased to drain through the artificial opening and the patient was passing between 40 and 55 ounces of urine in 24 hours. Examination of the urine previous to operation disclosed nothing abnormal, except a diminution in quantity, and a slight increase in specific gravity; and it remained in this condition until the drainage from the other kidney began to diminish.

The urine then showed large numbers of pus cells and renal epithelium, and increased in quantity until five weeks from the day of operation when the amount was normal. The pus and epithelium kept diminishing, but did not disappear until several weeks later. The actual cause of the obstruction was not definitely ascertained, but was probably due to some inflammatory disturbance at the base of the bladder, which caused pressure on the opening of the ureter. By draining the kidney the pain and irritation caused by the distention of the ureter were relieved, and as the inflammatory process subsided, the urine began to flow into the bladder through the orifice which had been occluded.

Some of the most important work which has been attempted on the ureters has been the endeavor to find a method by which the urine could be deviated from its natural course into the bladder, either for the cure of exstrophy of that organ or in cases in which it is so diseased that its removal is indicated. Implantation into the rectum has been done by many operators in many ways, but so far the results are not encouraging, because practically all patients suffer from ascending pyelonephritis sooner or later. During the past year I have

been doing some experimental work in the laboratory of the Medical Department of the University of California, with the following results:

Before I had had the pleasure of reading the work of Gaspare D'Urso and Achille de Fabri in this line I began my experimental operations by utilizing a piece of the small intestine to bridge over a gap between the cut ends of a ureter. A loop of bowel, preferably the ileum, which is found lying near the site of the removed ureter is chosen, and isolated from the fecal tract by cutting the gut transversely across in two places, leaving a piece sufficiently long to stretch easily from the bladder to the proximal end of the ureter. Great care must be taken not to tear the mesentery, or the vitality of the bowel will be impaired and disaster result. The proximal and distal ends of the cut intestine are united by means of the Murphy button, leaving the short piece free; this is then thoroughly washed out with a 1 to 1000 solution of formalin, and the other end partly closed by inverting at least one-quarter of an inch of the gut. Sufficient space is left unclosed to introduce the ureter, which must be drawn in by means of fine catgut sutures, for a distance of half an inch; this insures a large surface for rapid union and prevents leakage. Three or four sutures are placed to hold the ureter in position. The bladder is now opened near the fundus, the incision being of the same length as the width of the flattened bowel, the lower end of which is sewed to the bladder incision with through and through sutures of catgut. A second layer of sutures is placed one-eighth of an inch beyond the tract, taking in all except the mucus layers.

Three operations were done, and the results were perfect, except in the last dog, which died five weeks after operation from ascending infection, due to the fact that the bowel was not sufficiently washed out. The specimens from the other two cases were perfect and the kidneys did not show any evidence of infection. One dog was allowed to go three months and the other, six months before removing the specimens.

These experiments show positively that we can replace a portion of the ureter by a piece of bowel without very much risk, and the operation is preferable to nephrectomy or rectal implantation.

In case both ureters were cut the operation was modified somewhat, the loop of bowel being cut long enough to reach from one ureter to the other, and dipping low enough to touch the bladder, with which a lateral anastomosis is made in the same manner as though a gastroenterostomy were being done with sutures. One operation of this kind was done, but the dog died shortly after from an overdose of strychnin, and too soon to determine the feasibility of the procedure.

An operation for the complete removal of the bladder, and its replacement by a loop of intestine although rather extensive in character, will be found useful in some cases, and can be made much safer by doing it in two stages. The first stage consists in isolating the loop of intestine and waiting until the individual recovers before undertaking the second stage, which consists in implanting the ureters into the isolated loop, then dissecting the bladder from all its attachments and removing it, sewing the urethra into the lower part of the new bladder. This operation was done on one dog, who survived three days, and I believe would have lived if we had been able to catheterize it, as we found postmortem that the new bladder had become enormously distended, and had finally leaked at its junction with the urethra.

I believe that these operations will find their place in the surgery of the future, and as our technique improves, the danger of such formidable operations will grow less, and we will be able to save lives which are now lost on account of our timidity.

A NOTE ON THE USE OF THUJA OCCIDENTALIS IN REMOVAL OF PAPILLOMA OF THE LARYNX.

JAMES MOREAU BROWN, M.D.
CHICAGO.

Several cases of papilloma of the larynx have come under my observation, occurring in the practice of Dr. Moreau R. Brown, which were treated by removal of parts with forceps and the subsequent application of thuja. The following case is one in which good results were obtained by this treatment.

Mrs. W., an elderly woman, had been hoarse for about two years, had slight dyspnea, and at times noticed some little noise located in the larynx during respiration. She tried change of climate several times but found little relief. Upon examination with the laryngeal mirror, a papilloma about the size of the end of a finger was seen springing, with a broad base, from the false vocal cord of the right side, and extending beyond the true cord to the median line. The growth was of an unusually hard consistency. A portion of it was removed by the laryngeal forceps and tincture of thuja applied by means of a cotton swab. The piece removed was subjected to a microscopic examination and found to be papilloma. It having been found impracticable to remove the papilloma at one sitting, the patient returned at intervals of about a week and the treatment as above outlined was employed. At each visit the tumor was found to be perceptibly diminished in size. After it had been reduced to about one-half the original size, the thuja only was applied without any further attempt at removal with forceps and under this treatment the tumor entirely disappeared. After an interval of many weeks there was no indication whatsoever of the recurrence of the growth.

In addition to the foregoing, cases of a recurrent type have come to my notice which have entirely disappeared, with no evidence of recurrence after several years, in which thuja had been employed. Also a case of multiple papilloma in an adult, where the growth recurred rapidly after removal with forceps and where the thuja caused great shrinkage of the growth and consequent relief to the patient. In this case, although the sittings were but few and the results satisfactory to the patient as well as to the operator, the former disappeared from view and I am unable to state whether or not there has been any recurrence of the growth.

Venetian Building.

The Doctor's Little Daughter.—Here is a story of a little girl, the daughter of a local physician. She is a bright child of 6, and has been much petted by her admiring friends. Perhaps this has spoiled her a little, but she is so sweet and entertaining that visitors can't keep their hands off of her. One of these visitors, a new neighbor, made a call on the little maid's mother, and it wasn't but a few moments before the little maid was on her lap. In the chatter which followed the woman made some allusion to the little one's grandmother. "Why, didn't you know?" cried the child. "Know what, dear?" said the visitor. "Why," answered the child, "grandma is dead, and grandpa is dead, and Aunt Jane is dead—and most all of papa's patients are dead, too!"—*Albany Times-Union.*

SCIENTIFIC RESEARCH.

THE INDISPENSABLE BASIS OF ALL MEDICAL AND MATERIAL PROGRESS.*

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Senior Surgeon to the Cheltenham General Hospital, and to Cheltenham College.

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ONE HUNDRED YEARS AGO.

The medical orator of to-day, standing, as it were, between two centuries, must naturally, whilst regarding the present, glance also backwards and forwards. Now what was the condition of medicine a hundred years ago? Well, thanks to the work mainly of Haller, of Göttingen, and of Morgagni, of Padua, the old mysticism had to a large extent been dissipated, and a physiological foundation was laid by the first, and a pathological one by the second, for that vast superstructure of facts on which are based the medicine and surgery not only of 100 years ago, but of to-day. Haller and Morgagni were true disciples, though at a considerable interval, of Vesalius, who, following Mondino de Luzzi, first broke completely through the deadening influence of the Galenical tradition, and founded human anatomy on direct observation alone. Then it was that the paralyzing effect of the Roman edict of the first century was effectively removed, that for 1200 years had arrested the progress of anatomy, and with it all medical and surgical progress, by forbidding postmortem examinations—just as many good people now would tie our hands in other directions, and keep us stagnant till the world grew wiser.

It was that great medieval ruler, the Emperor Frederick II, of the illustrious house of Hohenstaufen, who once more, after its long neglect, revived the study of practical anatomy in the thirteenth century, by forbidding the practice of surgery to any but well-instructed anatomists, an injunction which led to the establishment of a school of practical anatomy at Salerno, in Lower Italy, and soon afterwards of another at Bologna.

The schools of Salerno and Bologna, with those of Milan, Montpellier, and Padua were, however, still too reverent of antiquity, and it was not before the advent of that greatest of anatomists, Andrew Wittings, commonly known as Vesalius (from Wesel on the Rhine, the original home of his family), who taught at Padua, Pavia, Bologna, and Pisa between 1539 and 1564, the reappointed, though never the actual successor of his own pupil Fallopius at Padua, that modern anatomy really began. I say reappointed, for he had been professor before at Padua, when he was only 23 years old, and after long wanderings, occasioned by accusations of impiety, had been honorably recalled, when, owing to a shipwreck, he lost his life—of such priceless value to science—at the too early age of 49. I must not attempt to describe the discoveries of Vesalius, though I may mention that, apart from his well-known corrections of the osteology of Galen, it is to him that we owe our first exacter knowledge of the inferior vena cava, the vena azygos, the ductus venosus, the cerebral ventricles, the peritoneum and the internal ear. One hundred and fifty years later arose one of Boerhaave's scholars, Albrecht von Haller, of Göttingen—himself a great anatomist—who, animated by the teachings of Vesalius, by his love of truth and Nature, and by an aptitude for physiological research, which was all his own, stands forth as the father of modern physiology.

In 1791 Morgagni, of Padua (a pupil of Valsalva, whom he constantly quotes), published what Matthew Baillie styled his stupendous work on the "Seats and Causes of Disease, investigated by Anatomy," thereby at once earning the title of the Father of Pathology.

Vesalius, Haller, and Morgagni were the true founders of modern medicine, and we can not even now peruse their writings without instruction and surprise. It was Glisson—Harvey's successor in the Anatomical and Surgical Chair of the College of Physicians (not Royal in those days)—who first declared that the great characteristic of living matter is that it moves, the ground of motion being irritability; but it was Haller who first distinguished between muscular irritability and nervous sensibility (the vital properties of Bichat), and explaining the great facts of physiology as largely dependent on both, removed at once the *Deus ex machinâ*, the extraneous spirit, so fondly imagined by the old physicians. The Pneuma of Hoffmann, the Nervous Liquor of Mead, the Anima of Stahl, the Archæus of Van Helmont, being no longer hypothetically needed, were gradually discarded. So it was that Haller and Morgagni, the great physiologist and the great morbid anatomist of the eighteenth century, led up to the improved practice of 1801 and later. This was to some extent due to John Brown, of Edinburgh, the representative in modern times of the so-called "Methodists" of the first century. Brown it was who first divided diseases into sthenic and asthenic, who first gave beef-tea in debility and who first fed fevers. The Brownian or Brunonian system, or the plan of stimulating or lowering as required, obtained a large vogue at the beginning of the nineteenth century, and still largely influences the practice of to-day. It must be freely conceded, however, that the highly philosophical doctrines of Brown were by no means judiciously or consistently carried out by himself and his immediate successors.

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A hundred years ago Edward Jenner was practicing in Cheltenham, and here the *genius loci* reminds me that I must not dismiss our greatest medical celebrity with a single line. To me the most interesting point about Jenner is that he was educated by John Hunter, which is to say that he became and remained a naturalist. He was not, however, neglectful of medicine—indeed he manufactured an improved tartar emetic—but he was at first more interested in fossils, hedgehogs, and cuckoos. His celebrated paper on the cuckoo, describing for the first time the inconsiderate conduct of the young cuckoo to his fellow-nestlings, need not be referred to here further than to state that for a long while he reckoned a personal visit to all the young cuckoos in his neighborhood as the first of his or his nephew's duties in May and June. It was this kind of training in natural observation which led at last to such productive fruit as his celebrated "Inquiry into the Causes and Effects of the Variolæ Vaccinæ," published in 1798. Wishing to test a tradition of Berkeley, where he was born and practiced at first, as to the smallpox immunity conferred by cow and swine pox, and fulfilling Hunter's injunction, "Don't think, but try," he made his first experimental inoculation from swine pox on his eldest son, aged 1½ years, in November, 1789. It was nearly eight years afterwards before the next step was made, for it was on May 14, 1796 (two years before the publication of his book), that lymph was taken from the hand of Sarah Nelmes, of Berkeley, who had been infected by her master's cows, and was inoculated into the arms of James Phipps, a healthy boy, 8 years of age. A typical vesicle and areola were produced, and two subsequent attempts to inoculate James Phipps with smallpox proved perfectly futile. Jenner next sent lymph to London to Mr. Cline, whose patient also resisted all attempts to inoculate him with smallpox. Jenner was thereupon invited to London, and wrote from Cheltenham in reply on September 29, 1798, his often-quoted letter in which he expresses his preference for the "lowly and sequestered paths of life, the valley and not the mountain," declaring his contentment and contempt of fame and fortune, "fame being only a gilded butt, forever pierced by the arrows of malignancy." He took up his regular abode in Cheltenham in July, 1800, living at first in the High Street, and afterwards at 8 St. George's Place. Though often absent he spent much of his time here for many years, as letters of his dating from 1802 to 1813 testify, vaccinating gratuitously at Alpha House Bayshill, the residence of the present Mayor of Cheltenham, all the poor who made application to him.

You know the rest, the rapid extension of the practice the world over, the parliamentary grants to him of £30,000, his medals and diplomas and honors from every nation, and the tardy and unwilling acceptance of his teaching by his own. Later came detraction, obloquy, and neglect, followed at last by

* Abstract of the President's Address, delivered at the Sixty-ninth Annual Meeting of the British Medical Association, Cheltenham, July 30, 1901, by courtesy of the Editor of the British Medical Journal.

443 smallpox deaths in 1896 in his own county, in the neighboring city of Gloucester; and finally the perilous experiment of leaving the decision as to whether vaccination should be done or not to the discretion or indiscretion of each head of a family. I am bound, however, to state that the perilous experiment is turning out much better than could have been expected. Truly you will mourn with me over those 443 preventable deaths in Gloucester, 1 of them of a vaccinated and 297 of them of unvaccinated children under ten years of age, when you reflect that during the same year and the next one there were, in well-vaccinated and revaccinated Germany, only 15 deaths from smallpox throughout a population of 53,000,000. Does anyone want more proofs? If so, they have them in the records of our own profession, which suffers from a general zymotic mortality far beyond, but from a smallpox mortality far below, the average; and this though we of necessity are much more than the general public exposed to the infection of smallpox. We, ladies and gentlemen, know the truth and how to act up to it, and most earnestly do I wish success to Dr. Bond and to the Jenner Society in their truly philanthropic enterprise of combating error and disseminating truth. I will say no more of Jenner and his work, though in this town, the former center of his activity, I could not well say less. I must, however, add that the sad experience of Gloucester has not been fruitless, and that Jenner's county is now perhaps the best protected against smallpox of any in England.

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THE MEDICAL STANDPOINT OF TO-DAY THE RESULT OF SCIENTIFIC RESEARCH

Pondering over medicine as it stands to-day, the main fact that strikes me about it is, how much more it owes to the biologists and to the men of pure science than to the so-called practical men. The practical man is indispensable, but he is not like the great biologists, a High Priest of the Arcana of Nature. The cell theory, for example, lies at the very foundation of modern medicine, and this theory certainly originated entirely with the biologists. The term cell was first used in reference to plants in the seventeenth century (1665) by Hooke, who, with his contemporaries, Grew and Malpighi, distinctly foreshadowed the cell theory of modern times. The cell nucleus was actually seen and drawn by F. Bauer so long ago as 1802, though it was not before 1831 that it received that name from Robert Brown, the botanist. Little notice, however, was taken of the subject before the publication of Schleiden's paper on "Phytogenesis" in *Müller's Archives* for 1838, in which he asserted that "every plant is an aggregate of individualised, independent, separate beings—namely, cells." Theodor Schwann, also in the next year, made a similar assertion regarding animals in his "Microscopical Researches," of which, and of Schleiden's paper also, the Sydenham Society published a translation in 1847.

Schwann was first impelled to his conclusion by noticing the extraordinary resemblance between the microscopic structure of the chorda dorsalis of the tadpole and that of the onion and of certain pollen matrices. Schwann, however, fell into error in asserting that cells arose spontaneously, and here he was set right by Barry in 1838 and later by Goodsir, who established the direct descent of every cell from a pre-existing one. This is Virchow's "continuity of life," his *omnis cellula e cellulâ*, the aphorism which he offers us in the place of Harvey's *Omne vivum ex ovo*. That *punctum saliens*, the nucleolus, was first noticed by Schleiden, though it was Schwann who gave it that name. Next came Hugo von Mohl in 1846, who recognized what we now call protoplasm in the cells of plants; the identity of which with a similar substance in the cells of animals was soon afterwards proved by Cohn and Remak. To Schwann a cell without a wall and a nucleus was no true cell, but Leydig in 1856 adduced pus and mucous corpuscles as instances of wall-less cells, and so step by step the ground was cleared for the now historical Cellular Pathology of Virchow, which influenced so profoundly the medical thought and practice of forty-three years ago. To Virchow as to Schwann a cell wall was a necessity, though this idea was soon afterwards dispelled by Lionel Beale and independently by Max Schultze in 1861. To Max Schultze we owe not only the extension of the term protoplasm (the bioplasm or living matter of Beale) to the contents of animal cells also, but the best description of an animal cell, namely, that it is a protoplasmic mass containing a nucleus; though even this last, we may add, is non-essential. All this work on the cell theory gave the original inspiration to Pasteur, and Pasteur leads up to Lister, of whom I will forbear to speak, for he needs no speech, though he might well say of himself, *Quæ regio in terris nostri non plena laboris!* I may mention this significant fact, however, that visiting the Polyklinik in Vienna two years ago, I noticed that the only name of a contemporary Briton inscribed on its façade was that of Lister. The cell theory, further leads up to bacteriology, the most imposing and the most impressive department of medical biology.

Now bacteriology, which originated with the labors of Cohn and De Bary, rests on cultivation and staining; and if year by year more and more of the germs of disease are recognized, it is because improved methods are constantly being perfected for coloring and making visible these formerly invisible entities. The modern practice of staining, so essential to the physician and surgeon of the day, began with the botanists Göppert and Cohn, who used carmine in 1849, and here again the pure scientists showed the way to the practical investigators of medicine, such as Gerlach of Erlangen, who first applied the method to anatomy. In 1871 and later Weigert succeeded in demonstrating nuclei by ammoniated carmine, and cocci by methyl violet. In 1872 Eberth and Wagner began the use of that admirable stain, hematoxylin. Looking through some old preparations of mine not long ago, I found that most of those stained with aniline dyes were faded, but those stained with hematoxylin were still bright and good. In 1879 Ehrlich enunciated his remarkable generalization that the basic coal tar colors (like fuchsin, methylene blue, and methyl green and violet) stain nuclei; whilst the acid ones (like orange-green) stain plasm, and the neutral ones (like rosaniline-pierate) stain special cell contents. Weigert, later, found that acid fuchsin was specially useful in the study of the nervous system, and Strasburger, the botanist, used the basic methyl-green to demonstrate those mitotic figures which are of such importance in embryological work, and have afforded a basis for the wide generalizations of the biologist Weismann. Nor need I pursue the matter much further than to state that in 1882 Koch, who had previously devised the method of cultivation of bacteria, first stained with methylene blue and thus discovered the bacillus tuberculosis, the consequences and far-reaching results of which discovery are well known to all of you. That I have said so much on this point is to strengthen my contention that the true basis of modern medicine is essentially scientific. As an admirable instance of the kind of debt that modern medicine owes to bacteriology, of its power and promise, as also of the extreme difficulty and complexity of the subject in its recent developments, I cannot do better than to advise the re-perusal of Dr. Horton-Smith's Goulstonian Lectures on Typhoid Fever.

In surgery the discovery of the Roentgen rays has been of priceless benefit, and the Cheltenham Hospital was, I believe, among the first of provincial hospitals to make use of them, but most certainly Roentgen was thinking of nothing less than of surgery when in the modest Physical Institute of Würzburg he undertook his epoch-making research on the cathodic rays of Sir William Crookes. I have been to that modest but celebrated laboratory at Würzburg, and heard there the true story of the discovery, which I must not here stop to relate, though I may remark that I have never seen it correctly reported in English.

I spoke of the antitoxins as among the most valued resources of remedial art, and it is to strictly scientific investigators, to such men as Loeffler and Roux, Behring and Kitasato, Haffkine and Yersin, that we owe these great discoveries.

Soon, I believe, we shall possess antitoxins for most of the febrile and infective diseases, as undoubtedly effective as is that one now so successfully employed against diphtheria. Personally, I place much faith in the antityphoid inoculations of Professor Wright, of Netley, and in the antitetanus serum; and I feel sure that many more equally effective and similar means will soon be in our hands against other diseases. But it

is not the practical physician and surgeon who will discover them, but the intellectual devotees of pure science, steadily pursuing, through good and evil report, their self-appointed task of universal beneficence.

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In thinking of the standpoint of to-day, I next recall the splendid work—purely scientific again—of the French and Italian investigators of malaria, of Laveran in 1880, and more recently of Marchiafava and Celli, Bignami and Grassi, but more especially of Golgi, who first proved that the feverish attacks coincided with the sporulation of the malarial amebæ. To which I am pleased to add, that it is, as you know, the President of our Tropical Diseases Section, Major Ronald Ross, who, following the promptings and surmises of Dr. Patrick Manson, has discovered nearly the whole life-cycle of the protozoon, and not only that, but has identified the true delinquent and disseminator of malaria with the mosquito Anopheles, a fact subsequently demonstrated by experiment on a human subject by the celebrated Italian biologist, Grassi; and still more recently by the experiment at Ostia in the Roman Campagna, where Drs. Low and Sambon and three others living by night for four months in their mosquito-proof hut, retained their health; whilst Messrs. T. P. Manson and George Warren (courageous sufferers for science), bitten in London by infected mosquitoes from the Sancto Spirito Hospital in Rome, developed soon afterwards every symptom of malarial fever. It seems that the hemamebidæ of malaria pass the whole of their life-cycle between animals and mosquitoes, and Dr. McCallum, of Baltimore, has further supplied the missing link of their sexual reproduction in the mosquito only. But the original hemameba can hardly have evolved itself in either. Whence, then, can it have originated? That is a question which I can not answer, though I may refer to the statement made by Captain L. Rogers, I.M.S., officiating Professor of Pathology in the Medical College of Calcutta, that where pure and filtered water is drunk there but little intermittent fever will be met with. At all events, it is quite clear that vertebrate animals are the intermediate hosts of the malarial germ, and that it has hitherto never yet been found in water or anywhere else, save in mosquitoes and in some vertebrated animals only. Elephantiasis, whose hematozoon, the filaria nocturna, was discovered in the blood by Surgeon-Major Timothy Lewis in 1872, is distributed by another mosquito, the Culex pipiens or ciliaris, as first proved by Dr. Manson. And even this does not exhaust the delinquencies of these dangerous insects, as there can be little doubt that they also disseminate yellow fever; witness the experience of the American army surgeons in Cuba, where that scientific martyr, Dr. Jesse W. Lazear, though isolated from yellow fever cases, yet died of it seven days after submitting to the puncture of an infected mosquito, and Dr. James Carroll, under similar conditions, narrowly escaped with his life. This particular mosquito has recently been recognized by the United States surgeons as the Culex fasciatus, and it is probable that the transmission of yellow fever is due to it alone. The study of tropical diseases has, in fact, now become a refined department of biological investigation. Smith and Kilborne have shown the part played by ticks in disseminating the cattle fever of Texas, and ticks also are said to be responsible for the miana disease of North Persia, and for a dysenteric fever of the Zambesi. Some forms of dysentery, as first suggested by Lösch in Russia in 1875, are probably originated by an ameba. In this town of Cheltenham old cases of malarial fever are often met with in returned officers and civilians, and I have yet to see the case that will resist six subcutaneous injections of 3 grains each of the acid hydrobromate of quinin.

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MORE UNIVERSITIES AND RESEARCH INSTITUTIONS NEEDED.

I think I have said enough to prove that the progress of pure science means medical progress also, and that it is to the men of pure science that we must still look to hold aloft for us the torch of progress. I can only hope that in the great advances still to be made Great Britain and Ireland may play their worthy part; but I confess I have my misgivings unless some improvements are made in our educational arrangements. As the result of several recent Augusts spent in many of the Continental capitals, I have been struck with the thoroughness and scientific spirit everywhere there manifested; being very different, I regret to add, from the antiscientific spirit which characterizes most of the wealthier and more cultivated classes in this country. This antiscientific spirit is only eradicable by the better education of the young. To what other cause can we ascribe the fact that although the aniline dyes were discovered in 1858 by an Englishman, Dr. W. H. Perkin, yet almost the whole of their manufacture is now carried on in Germany. One company, the Badische Anilin and Soda Fabrik, employs 146 scientific chemists, 75 civil engineers, and 6300 workmen in one alone of its three factories. I know not if any words of mine will reach the eyes of those who govern in this country, but if they do, I will implore them to give to our youth more facilities, similar to those enjoyed on the Continent and in America. I know that much has been done, and no fault is to be found with our primary education. The National Physical Laboratory and the Jenner Institute of Preventive Medicine, have been established, the former in principle, the latter in reality, thanks to the splendid munificence of Lord Iveagh. New colleges, universities, and technical schools have been started, and some 15 to 17 research scholars are appointed every year, one half of whom, I may remark, proceed at once to Germany to make their researches! What has been done, however, is as nothing to what ought to be done.

Depend upon it, there is as much scientific ability and aptitude for research in the country of Cavendish and Priestley, of Faraday and Kelvin, of Darwin and Huxley, of Jenner and Lister, of Rayleigh and Ramsay, as in any foreign nation; but here the chances and opportunities are much fewer, and many a great discoverer that might have been, one of whom it might have been written that—

> He broke his birth's invidious bar,
> And grasped the skirts of happy chance—

spends his untrained energies in futile efforts and vain regrets, and wholly wastes his commanding intellect for the want of instruction and opportunities easily accessible.

But the cost? It would be as nothing in proportion to the gain, and a Faraday, a Koch, or a Pasteur would be a cheap purchase at a million. Whereas France, Germany, and the United States educate at their universities approximately one student in every 1500 of the population, we in the United Kingdom are content with less than 1 in 2000. Whereas Germany spends £753,000 a year on its twenty-two universities and France £740,000 a year on its sixteen, we in Great Britain and Ireland are content with less than one-fifth of that amount, namely, £135,339 among seven of our thirteen. Although the Leland Stanford University of California has received no less than nine millions sterling from private munificence, and many others of the 480 American universities and colleges have likewise received huge sums—I may specify the Chicago University £2,000,000, the Johns Hopkins University £1,400,000, and the Cornell University over £1,000,000—no such general largesse is, I fear, to be expected from our British millionaires. The help must come from the government, supplemented by local contributions, or it may not come at all. Yet the matter is one of life or death for the country, for more and more every year the victory in every department, and the predominance in arts and trades, will pass to the possessors of the latest knowledge, the deepest science, and the most perfect and most economical processes. I can not but believe that this great need will soon be remedied, and that at the cost of a few battleships real universities of teaching and research, like the new University of Birmingham, will be established in every large town, and technical and research institutions—there are twenty-five of these in Germany and forty-three in America—in most of the smaller ones. At present we are feeling keenly the competition of America, a competition that is not likely to diminish, for it possesses over 100 schools of chemistry, and has 10,000 students of engineering. This competition that we can only hope to resist by imitating the foresight, generosity, and enthusiasm for science by the American Governments and of the American men of wealth.

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THE MORBID ANATOMY OF PROGRESSIVE MUSCULAR DYSTROPHY.

The pathology of the group of diseases comprehended in the designation progressive muscular dystrophy and including so-called idiopathic, hereditary, juvenile or scapulo-humeral, infantile or facio-scapulo-humeral muscular atrophy and pseudohypertrophic muscular paralysis is yet surrounded in dense obscurity. For a time confusion with progressive muscular atrophy of spinal origin existed clinically, but postmortem examinations failed to disclose the characteristic lesion of this disease. Such anatomic abnormalities as have been found were not uniform or distinctive and the most probable explanation is that the disease represents some defect in development. A case somewhat confirmatory of this view has recently been reported by Dr. Jenö Kollarits.[1] The patient was a boy, 10 years old, presenting the pseudohypertrophic type of progressive muscular dystrophy, the exact time of the beginning of which could not be determined. He had been totally helpless and unable to walk for more than two years, and contractures were marked. Postmortem examination disclosed characteristic fatty degeneration of portions of muscle, with atrophy of some and hypertrophy of other fibers. In the nervous system there were found dilatation of the central canal, diminution in the number of fibers in Lissauer's zone, as well as in the gray matter surrounding the central canal, in the anterior and posterior gray commissures and in Clarke's columns from the cervical to the upper lumbar portion of the spinal cord. This absence of fibers was less marked in the anterior horns, whose ganglion-cells were structurally intact, although reduced in size. It will thus be seen that there is no relation between the muscular and the nervous lesions —unless we except the diminutiveness of the ganglion-cells in the anterior horns—so that it may not unreasonably be concluded that both are the results of a common defect in development. It may possibly be, however, that there is some etiologic connection between the small size of the ganglion-cells and the developmental deficiency in the muscles.

In this connection the report of a fatal case of progressive muscular dystrophy of pseudohypertrophic type by B. Sachs and Harlow Brooks[2] is not without interest. The patient was a man, 25 years old, in whom symptoms had been noticed for about fifteen years and two of whose brothers suffered from similar disease. Death resulted from pneumonia, and on postmortem examination there were found extensive atrophy involving nearly all of the skeletal muscles, to which it was confined, the muscular tissue being replaced by diffuse areolar connective tissue and adipose tissue; slight general perivascular connective-tissue hyperplasia; moderate interstitial myocarditis; extensive degenerative changes in a few of the cells of the posterior-root ganglia; and rare and irregular types of cytoplasmic alterations without morphological change in the ganglion-cells of the spinal cord.

Great significance is attached to the changes found in the posterior-root ganglia, although it is admitted that they do not necessarily bear a direct relation to the muscular atrophy, the number of cells affected being disproportionately small as compared with the extent of the atrophy. It is thought probable, on the other hand, that secondary alteration in the ganglia might result from primary disease of the muscles. Occasional, isolated degenerated fibers were found in the posterior columns, but these were thought to be probably ascending central branches of the degenerated spinal ganglion-cells. The cytoplasmic degeneration of the ganglion-cells of the spinal cord is attributed to postmortem change or to terminal infection. The ganglion-cell changes are not considered sufficient or of such a character as would be expected if the process were a secondary one following the long-standing muscular atrophy. Chromophilic changes in certain of the cells of dorsal segments are referred to nutritive disturbances, particularly affecting this portion of the cord following extensive and rapidly progressing curvature of the related portion of the spinal column.

The opinion is expressed in conclusion that the disease may be dependent upon some defect in embryonal structure that prevents satisfactory development of the muscular system. The disorder is thought to represent a primary affection of the muscular fibers, the fatty degeneration of which is secondary to the hypertrophy and atrophy of the muscular tissue.

1. Deutsches Archiv f. Klin. Medicin, 70, B., 1 u. 2. H., p. 157.
2. American Journal of the Medical Sciences, July, 1901, p. 54.

THE SO-CALLED CARDIAC NEUROSES.

"Cardiac neuroses," so-called, have been attributed as a general rule to disturbances in the normal workings of the nervous apparatus of the heart. In this, as in many other instances, the effort at classification has probably gone beyond our actual knowledge of the nature of the processes in question, because it is not yet clear how much of cardiac function depends on the nervous mechanisms, and how much on the muscle cells of the heart. Just at present physiologists are inclined to lay especial stress on the automatism of the muscle cells and to refuse to attach much if any importance to the nervous influences.

In a recent paper by L. F. Barker[1] this subject is reviewed from the anatomic, physiologic, and pathologic points of view. It is pointed out that the heart has no nerves at all when it begins to beat in the embryo, and that the vagus fibers grow out to the heart, while the sympathetic neurons, at first entirely distinct from the heart, gradually enter its walls and locate there permanently. Furthermore, that modern physiologists by experimental work have shown that the normal rhythm of the heart is inherent in the muscle cells of the adult heart and not due to the rhythmical discharge of nervous impulses along nerve fibers. The automatic rhythmic activity of the heart is favored by the Na -ions in the blood, associated in a certain proportion of Ca -ions. The muscle cells of the heart have three distinct properties, namely, contractility, conductivity, and the power to initiate primary automatic stimuli at regular intervals. These properties are influenced in various ways, especially by nervous influences. It has been proposed by Engelmann to call the nerve fibers that affect the force and extent of the contractions, inotropic; those that affect conductivity, dromotropic; and those that modify the frequency of primary automatic stimuli, chronotropic. These designations need not be restricted to nervous influences alone, but may be well applied to any and all influences operating in the manner indicated.

Barker then discusses the abnormalities of cardiac rhythm—the tachycardias, bradycardias, embryocardias, pulsus intermittens, etc., and it is shown that the analysis of irregular heart action promises valuable results when based on modern anatomic, physiologic, and pharmacologic research. The most prominent feature of the present analysis is the importance assumed by the cardiac muscle itself, and Barker suggests that until the dynamics of the processes concerned are better understood the term "cardiac neuroses" should be left in the background, and the arhythmic states grouped rather under a more general term, such as "disturbances of cardiac motility."

Just at present we know little concerning the functions of the nervous mechanisms of the heart, be it under normal or under pathologic conditions. Indeed, it is not at all unlikely that many morbid conditions, now called "nervous," will be found later to depend on factors better and more correctly described by other terms.

1. Chicago Medical Recorder, May, 1901.

BIRTH-RATE IN NEW ENGLAND.

A high Canadian official, the Hon. David Mills, Minister of Justice for the Dominion, has indulged in some remarks on the degeneracy of the New Englanders. The head and front of his accusation is that they do not raise large families, and he thinks the United States has a serious problem before it in this decrease, or rather lessened increase, of its population. The amount of misinformation, or, to put it more plainly, gross ignorance, at the bottom of his jeremiad is remarkable. It is true that there has been a decreasing birth-rate in New England, but this is not so wonderful or alarming when one considers the facts. There are plenty of towns in that section where the birth-rate is low simply because there are few of the population of the productive age; they are kept up largely by the return of old people to their former homes, by summer residents from the cities who do not count in their statistics, and to a certain extent by immigrants from the outside. The young people very largely leave home before marriage, some at the time of marriage. It is not an ideal state of affairs, but it is better than it looks in official vital statistics. The New England blood has permeated the whole country and still in its present condition that section sends out a quota of energetic vitality that makes its mark in every way.

As regards other portions of the country which this critic seems also to include in his condemnation, it should be remarked that birth-returns are almost everywhere defective; in only a few of the older sections can they be relied on as approximately accurate, and the errors are altogether in omissions. The problem of school accommodation for the rising generation is a perpetual one in many of our cities, and yet the birth-rate is practically non-existent according to the returns. There is also in nearly every prosperous community a tendency to a decreasing birth-rate and this seems to be enhanced by some conditions of modern civilization.

Take the United States as a whole and it would probably be found, were the true figures available, that it is not much worse off than most other countries and better off than some. Among these last we have to reckon Canada, and more particularly that portion of it that claims the Hon. David Mills,[1] namely, Ontario. According to the registrar-general's report last year the birth-rate of that province was lower than that of any state in the Union, being only 19.9 per 1000. It seems, therefore, a little gratuitous, to say the least, for this Canadian cabinet minister to send out such utterances. If they were justified by the facts the case would be bettered, but they would seem to show a prejudice causing him to ignore his own vulnerable glass house. As it is, we have to consider them the result of either prejudice or inexcusable ignorance.

KOCH'S ADDRESS AND THE NEWSPAPERS.

The reception which Professor Koch's address before the British Tuberculosis Congress has received by the lay press is amusing. Glaring scare-heads have called attention to the remarkable and wonderful things that will now happen; to the fact that tuberculosis has been discovered to be a curable disease; that it is not transmitted from animals, and heaven knows what else. As we published the address in full last week, our readers have had the opportunity of reading for them-

1. See THE JOURNAL A. M. A., xxxvi, p. 819.

selves just what Koch did say, and what there was in the paper that should cause all this furor.

Briefly, he announced that tuberculosis is preventable; that special measures are needed for the prevention of different diseases, illustrating this by showing how plague, cholera, hydrophobia and leprosy must be met, each by different methods, and that the prevention of tuberculosis must also be opposed by special measures peculiar to itself. All this has been announced before, time and again, and had been accepted by the very large proportion of the medical profession. The measures he recommends for prevention and cure in the incipient stages were only such as had been recommended by others and by himself before, not one being new. The only thing that was startling as coming from Koch was the announcement of his belief that bovine and human tuberculosis are not intercommunicable diseases. This, too, is not a new idea, for while the opposite has been generally accepted as true, many have held to the views as now announced by Koch.

The only important announcement in Koch's paper is that in which he gives the result of his experiments in the investigation regarding the transmission of human tuberculosis to animals. But this is important only as it apparently confirms the view held by some for a long time, but which has not been accepted by the many. He failed, in each of the nineteen experiments he made, to convey human tuberculosis to bovines, but succeeded every time in conveying bovine tuberculosis to bovines. Similar experiments have been reported before by others with similar results. He made no experiments in the transmission of bovine tuberculosis to human beings, neither has anyone else. He advances no positive proof that bovine tuberculosis is not transmissible to man, but bases his opinion that it is not transmissible on theory and inference. Dr. Koch proves by positive facts one thing, viz., that the human form of the disease is not communicable to bovine animals. Thus far do his positive results go; the rest is negative. There has been no reason for all the wild talk on the subject. Had the experiments been made and the paper written by any one but Robert Koch, there would have been hardly a ripple even in the hall in which it was read.

VACCINATION IN PORTO RICO.

One of the first things that American imperialism forced upon the people of Porto Rico was the loathsome disease, vaccinia! The result has been that the privilege of having smallpox, wholesale and retail, *ad libitum*, as under Spanish rule, has been almost destroyed. During the last six months of 1899 there was but one death from this disease, against 272 in the first six months, and since then the regular epidemic has been a thing of the past; the resource of six or seven hundred annual deaths that used to be such an appreciable factor in reducing the surplus population has been entirely lost. The new generation of Porto Ricans will have to grow up unpitted! One would think that such brutal oppression as this of a subjugated people would have been made the most of, and that the antivaccinationists and other "aunties" would have stormed the White House and the Capitol with their protests. But no, they never even mention it, and the Porto Ricans themselves are so unappreciative of their wrongs that it has never been even suggested by them as a grievance. As a lay paper says, "Though to ordinary intellects such a proof of the efficiency of vaccination to prevent smallpox will be convincing, there is no doubt that the Spartan band of antivaccinationists will continue to flourish. For, how can the actual experience of a million or so weigh in the balance against the theories and the dicta of those who are bound to differ from the rest of the world and to expose themselves, their children and their neighbors to contagion in the cause of independence and enlightenment!"

AUTHORITY IN MEDICINE.

It is fortunate that in medicine we are not wedded to precedent as in law, and that authority is only presumption. Every dictum, no matter from how high a source, must be tested by the rigid rules of evidence, rules much more exacting in medicine than in law, though not laid down with such precision. When, therefore, Professor Koch expresses an opinion that is opposed to the generally accepted views, no matter how high his authority, its correctness must be shown by experimental methods or adequate clinical observations before it can form a part of the admitted medical beliefs. The evidence that has been convincing to him must be tested by others and, it is safe to say, be supplemented by further facts before it is fully satisfactory to many of those tuberculosis specialists that have, so to speak, staked their reputation upon the truth of opposing views. We can expect, therefore, a lively controversy, a thorough discussion of the facts thus far available, and a very general search for new ones that will bear upon one or the other side of the question. His utterances will, beyond doubt, call out also many who, like him, have experienced doubts, but have been hesitant in their expression; he will not stand alone on his side of the debate. They will also stimulate active research, experimental so far as is possible, both private and by public boards of health, etc., and all this will be a distinct gain to science and ultimately also of practical benefit in guiding public policy on this important question. What we know or suspect will be proven or disproven; we shall stand at last, whatever the decision may be, on firmer ground. This is the utility of authority in medicine; it is not slavishly accepted, but is a stimulant to thought and work and thus a direct factor in scientific progress. Whether Professor Koch is right or wrong, his open statement will, it is hoped, help to put an end to dogmatic assertion which has too much prevailed in the discussion of tuberculosis; we shall have less words and more work on the subject, and therefore more reliable results. There are many who believe in the transmissibility of bovine tuberculosis to man who have yet felt a want of reasons for the faith that is in them. Medical science is not safely based on *a priori* deductions, however expedient they may seem

to be, and we certainly lack a sufficient body of evidence on this particular point. Let us hope that it will be soon supplied.

RETENTION OF DIPHTHERIA BACILLI IN THE VENTRICLES OF THE LARYNX.

It has now been firmly established, and it is generally recognized, that diphtheria bacilli may be present in the throat in the absence of symptoms of diphtheria, lodgment, but not infection, taking place; and also that the bacilli may be found in the throat long after recovery from the disease has occurred. A further possible site and source of infection that is likely to escape detection, unless specifically looked for, is pointed out by Dr. W. J. Horne,[1] namely, the ventricles of the larynx. This observer relates the case of a child, nine months old, who presented symptoms of laryngeal obstruction requiring tracheotomy, but no positive evidence of diphtheria, as an instance of which it was nevertheless regarded. Treatment with antitoxin was instituted, but death ensued. On postmortem examination, the pharynx and the larynx were found free from membrane, and cultures from these parts failed to disclose the presence of diphtheria bacilli, which were found, however, in cultures made from the interior of the ventricles of the larynx. Reference is made to a second and precisely similar case that subsequently came under observation. It is pointed out, further, that the fatal cases of so-called membranous laryngitis that have been regarded as non-diphtheric because diphtheria bacilli were not found, from failure to examine the ventricles of the larynx, may really have been of this nature. The same observer had previously called attention to the frequency with which he had detected tubercle bacilli in the recesses of the ventricles of the larynx in subjects dead of tuberculosis when this organ presented entirely normal naked-eye appearances.

CLINICAL EXAMINATION OF BLISTER-FLUID.

The last decade has witnessed a great advance in our knowledge of changes in the blood. As is the rule, while we have become acquainted with a large number of new facts, we are without explanation for many of them. Enough, however, it would seem, has been learned to show that the blood-making organs react in peculiar and special ways to various forms of infection, so that not a little diagnostic information is to be gained from systematic examination of the blood. Thus, it has been shown that an increase in the number of leucocytes occurs not only physiologically—in the sequence of digestion, in the newborn, during pregnancy, after parturition and after violent exercise—but also as a pathologic manifestation, as in association with leucemia, in the train of hemorrhage and in conjunction with various infectious and toxic processes; while it is as characteristically absent from some others of the last named. Under some conditions the increase involves especially certain of the white cells, as in the eosinophilia attending the presence of intestinal parasites and also asthma. Two French observers, Roger and Josué, have gone a step further and have shown that important diagnostic information can be gained by examination of the fluid contents of blisters induced artificially. In health they found as many as 25 per cent. of polymorphonuclear eosinophile cells, while in the presence of various infectious processes the number of these cells, if any were present, was much smaller. These changes, it is thought, are dependent upon the influence exerted by the toxins upon the bone-marrow, in consequence of which the latter is stimulated to the production of an excess of polymorphonuclear neutrophile cells, to the exclusion of the polymorphonuclear eosinophile cells. The application of a blister, however, stimulates the production of eosinophile cells and the result of the examination is to disclose the ability of the bone-marrow to produce them. In ordinary cases of pulmonary tuberculosis especially, though not exclusively, the polymorphonuclear neutrophile cells preponderate, while the eosinophile cells are present in small number, if at all. The cells, besides, appear swollen and distended. There seems to be good reason, therefore, for believing that much valuable information is to be gained from a careful study of the blood in its varying phases and under varying conditions, and the subject is one deserving of further investigation.

1. Jour. of Laryngology, Rhinology and Otology, June, 1901, p. 275.

IMPOSTORS AMONG ANIMALS.

In an article with this title in the *Century Magazine,* Professor Wheeler of the University of Texas quotes from Henry Drummond to the effect that before the masterpieces of deception among animals "the most ingenious of human impositions are vulgar and transparent." The article deals with deceptive disguises, which affect the form, attitude, and especially the color of animals. Every student of animal life is familiar with the close resemblance of many birds and other animals to the soil and vegetation. Certain chameleons, tree frogs, cuttle-fishes and shrimps are actually able to so change their appearances as to harmonize in color with their surroundings. Insects and spiders have reached the greatest degree of perfection in disguises of this kind, which subserves both defensive and offensive purposes. Numerous examples are cited of insects which copy in their appearances almost any of the exposed parts of the plants among which they exist. There are also insects and spiders that imitate the excreta of other animals, as for instance, the bird-dropping spider described by Forbes; and Drummond describes a harmless insect in similar garb which is thus shielded from its natural enemies. While some animals are protected by these resemblances to their surroundings, others present loud colors and a fearless behavior coupled with poisonous or painful stings or with pungent nauseating secretions which furnish their possessors a certain degree of protection from attack. These so-called warning characters generally consist of alternating bands of contrasting colors. The wasps, hornets, poisonous king snakes, and the skunk are examples of this category. Animals of this group seem to be copied by animals that possess the warning colors but no disagreeable traits. The mimics occupy the same geographic areas as their models and associate with

the latter, being thus protected from their enemies, who confound them with their disreputable company. Butterflies have furnished most material for the study of mimicry. In the Northern states harmless two-winged flies mimic the warning colors of wasps and bees. The comparative small number of mimetic animals is explained on the ground that any considerable increase among them is sure to result in detection of the fraud and in destruction of the species by its natural enemies. Then, there are a number of animal impostors which, though quite inoffensive, assume colors and attitudes calculated to terrify. Chameleons may puff, mammals and birds may cause their hair and feathers to become erect, and lizards may spread out special frills, all without being able to inflict any real injury. Of course, it is evident that animals are not impostors in the ordinary sense of the word, because they are not conscious of their hypocrisy. While they seem to pose for a purpose and while "their whole life is a sustained lie," at least in the sense that they seem to be what they are not, yet their often highly successful efforts at deception can not be attributed to teleologic motives, but are the result of natural chemical and physical processes, which are not clearly understood.

ECONOMIC VALUATION OF VISION.

That the mathematical valuation of vision and the estimation of its relation to the earning powers is possible is not as yet known to the courts of law and the business world. Indeed, there is but little medical literature upon the subject. Damage to the eyes and sight is a common cause of complaint in suits for injury, and where pecuniary compensation is allowed the amount is often improperly estimated, and is largely influenced by empirical ideas, as in the case of a recent decision of a Texas court[1] allowing $7,000 for the loss of an eye. Cases constantly occur where less amounts are allowed. The accident insurance companies and the United States Bureau of Pensions allow comparatively small amounts. That a loss of vision has a direct detrimental effect upon the earning powers[2], where impairment of sight is considered total disability, is certainly conceded. H. V. Würdemann, of Milwaukee, and H. Magnus, of Breslau, in a recent article,[3] show that the earning ability for most trades and professions is practically synonymous with the visual earning ability, and that damage to vision invariably entails a loss of earning power and of wages. The factors entering into economic vision are the functional power, the technical knowledge, and the ability to compete in the labor market. The technical knowledge depends upon the other factors and the formula may be simplified by its elimination. These factors are compound. Vision is composed of the sub-factors of the central acuity, the visual field and the muscular functions, each of which have their relative value. Other sub-factors are likewise included in estimation of the preceding. The ability to compete depends upon the bodily health in large part and is given appropriate valuation in the formula. Damage to any or all of these factors produces a definite effect upon the whole valuation. We may exactly estimate the value of each of these factors by the ordinary means of scientific examination, that is, the acuity by the test letters, the visual field by the perimeter, etc. Thus the percentage of loss from injury may be readily figured. Although such estimation involves use of the higher mathematics, by the use of tables and diagrams prepared by the expert mathematician the computation is brought down to the mathematical ability of the average physician or lawyer, a simple multiplication example being used for the solution of the individual case. The authors show that the loss of one eye, for the worker whose trade has higher visual demands, entails a loss of 30 per cent. of his earning ability for the first year after the accident and 20 per cent. afterwards. For the lower class of trades the loss is 27 and 18 per cent. Other factors of visual loss are fully considered. The prospective loss in wage earning in the individual case may be readily calculated. They figure with the compensation the individual has been getting and his prospective future earnings, which depend upon his age, business and state of his visual functions. Similar propositions are involved in these calculations as are so successfully used by such immense interests as the modern insurance companies in their estimations of probabilities, the results being not the exact amount that a man will earn, but what he might reasonably expect. This probable pecuniary or economic damage should be the basis for settlement of claims for damage, of course modified by the legal circumstances involved in the individual case.

1. Court of Civil Appeals, Texas; De la Vergne Refrigerating Co. vs. Stahl.

2. Vide decision Lillie vs. Brotherhood of Railway Trainmen, abstract in JOURNAL A. M. A., July 20, 1901, et al.

3. Annals of Ophthalmology, April, 1901. See p. 350, this issue.

Medical News.

ILLINOIS.

Dr. Sanford E. Winget, Kewanee, has been appointed director of the Joplin, Mo., Medical and Surgical Institute.

Dr. Omar A. Kell has been appointed a member of the medical staff of the Illinois Eastern Hospital for the Insane, Kankakee.

Dr. A. B. Middleton, Pontiac, has been appointed physician to the reformatory to succeed Dr. James A. Marshall. Dr. Middleton is at present in Europe.

Chicago.

Dr. and Mrs. Plumer M. Woodworth and Mrs. Nicholas Senn, who have been traveling in Europe, sailed for New York, August 1.

Dr. John D. Marshall, examining and supervising dental surgeon, U. S. army, has been transferred to the Presidio, San Francisco, California, and has gone to his new post of duty.

Betiero Registered.—After investigation by the State Board of Health it has been found that the physician who recently applied for permission to bury a hypnotic subject, is a regularly licensed practitioner.

Antitoxin in Zion.—After the recent death of a child from diphtheria in Dowie's Zion, Chief Medical Inspector Spalding of the Health Department succeeded in inducing the mother to allow antitoxin instead of prayer to be employed as a prophylactic in the case of her other children.

Former Deputy Coroner Weckler pleaded guilty to malfeasance in office and was fined $200 and costs, July 30. The charge was that a fraudulent inquest had been held in the case of Marie A. Defenbach. Weckler in pleading guilty said that his fault was due to negligence, and that he had no part in the conspiracy.

Co-Education and Rush Medical College.—The newspapers have announced with great headlines that Rush Medical College will hereafter admit women. This, however, is true only as it applies to the first two years, which courses are taken at the University of Chicago. It being a co-educational institution all its classes must be open to women; this is as far as women have been admitted to Rush Medical College. What will be done in regard to their admission in the junior and senior years has not yet been decided. Through the announcement by the Rush Medical College that a change had been made in the plan of quarterly examinations, the erroneous idea gained circulation that the quarterly system had been abandoned. The officials at the college say that the quarterly system has proved one of the best divisions of the scholastic year that the college has ever adopted. They pronounce it a great convenience to many students and highly advantageous to the faculty and the institution. The change in examinations was deemed necessary and provides a final examination before a student is graduated.

Last Week's Increased Mortality,—There were 617 deaths reported to the Health Department during the week ended July 27, an increase of 190 as compared with the preceding week and of 175 as compared with the corresponding week of last year, making an annual death-rate per 1000 of 18.29 as compared with 13.42 in 1900. A great part of this increased mortality is due to the excess of deaths from the acute intestinal diseases, there being 175 deaths recorded from these causes as against 80 the preceding week. Of the total deaths during the week 199 occurred among those under one year of age, 77 between one and five years and 98 over sixty—a total of 374 at these age divisions, or 60 per cent. of the total mortality. This is probably the culmination of the disastrous effects of the prolonged heated term, to which the excess of deaths at the extremes of life is clearly ascribable, as well as the excess of deaths from the acute intestinal diseases. Contrary to the usual experience this latter excess bears no relation to the character of the water supply. Since July 5 the water from all sources has averaged 96 per cent. "good" or "usable," and on only three occasions during this period has the supply from any station been "suspicious" or "bad."

INDIANA.

Licenses to practice were granted to 75 of the 90 applicants who appeared for examination before the State Board of Medical Registration in July.

Dr. **Frederick R. Charlton**, who served during the Spanish-American war as surgeon of the 158th Indiana Infantry, U. S. V., has been appointed a member of the Board of Pension Examining Surgeons for Indianapolis.

Smallpox in Indiana.—The State Board of Health has ordered that, while smallpox exists in Indiana, and the time of its disappearance will be officially announced by the State Board of Health, it shall be the duty of all physicians to immediately report to the health officer having jurisdiction, all cases of eruptive disease which may remotely resemble smallpox and which may come under their care. It shall then be the duty of the health officer to promptly quarantine the case or cases of eruptive disease and maintain the quarantine until fourteen days have elapsed from the time of the outbreak, or until the eruptive disease is positively determined not to be smallpox.

KANSAS.

Dr. **Arthur E. Hertzler** has returned to Halstead after a two years' post-graduate course in Germany.

Registration fees amounting to $1069 have been turned over to the state by the secretary of the State Medical Board. These are the first-fruits of the new medical law.

The **State Board of Medical Registration** has set apart August 13 for examination of applicants for practice and for inspection of diplomas of practitioners of Wichita and vicinity.

The **Physio-Medical Institute** of Kansas City is not considered a "standard" institution by the State Board of Medical Registration and Examination, and the certificates of the institute will not be accepted as proof of practice. The board is upheld in its action by a decision from the attorney-general.

MASSACHUSETTS.

Dr. **George L. Richards,** Fall River, is in Europe. He will return in October.

Dr. **and Mrs. Francis D. Donoghue,** Boston, have recently returned from their trip to Europe.

The City Hospital, Worcester, is to have an isolation ward on the hospital grounds, to cost about $75,000. The ward as planned will be a two-story brick building, so divided that communicable diseases may be separated from one another.

MINNESOTA.

Morrison County has organized a board of health with Dr. Norman W. Chance, Little Falls, as health officer.

Asbury Hospital, Minneapolis, has received a gift of $1000 from Mrs. Abigail Knight. It is announced that the walls of the new building will be erected and the building enclosed before winter.

A Smallpox Conference is to be held at Duluth, August 13, which will be attended by many health officers, physicians, county commissioners, railroad men and lumbermen, representing the northern portions of Minnesota, Wisconsin and Michigan.

MISSOURI.

Dr. Eugene A. Scharff, city dispensary physician of St. Louis, has resigned and will devote himself to private practice.

The Warrensburg quarantine, on account of smallpox, which has been in force for forty days, was lifted July 24, and the guards discharged.

On account of smallpox the Nodaway County Board of Health has prohibited the holding of all public gatherings, such as picnics, reunions, etc., until further orders.

Free Medical Course.—The University of Missouri, Columbia, has increased its medical course to four years, and tuition has been made free in this department. The General Assembly has appropriated $40,000 for a new medical building and the Parker Memorial Hospital will be ready to receive patients this fall.

NEW YORK.

The Oneonta Hospital Society, which was founded in 1894 by Dr. Ozias W. Peck, was dissolved July 18 and has been succeeded by the Aurelia Osborne Fox Memorial Hospital Society.

Biennial Examinations.—The State Board of Regents has decided to divide the final state examinations for license to practice medicine and surgery so that students may take their examinations in anatomy, physiology and chemistry at the close of the second year.

A New Bellevue.—John W. Keller, commissioner of public charities, fully endorses the action of the State Board of Charities which has condemned Bellevue Hospital as unfit for hospital purposes and has called on the municipal authorities to provide more suitable quarters. Commissioner Keller says that if he has his way, Bellevue Hospital will be razed and a new building will be erected on the present site, or further uptown, equipped with every modern appliance at a cost of $2,000,000.

The New Antitoxin Laboratory, Albany, the establishment of which was provided for by the last legislature, has been started under the charge of Dr. H. D. Pease, of Sheffield Scientific School. Diphtheria, anti-tetanus, anti-typhoid and other sera will be prepared at the laboratory and distributed free of cost to state institutions and local health boards. It is intended to supply to all the health officers throughout the state the same facilities for investigation, diagnosis and treatment of infectious diseases as are now supplied by the City of New York.

OHIO.

Dr. J. W. Jones, Sharon, Butler County, has been appointed assistant physician at the Toledo State Hospital.

Dr. Ralph Holmes, Columbus, has been appointed assistant physician at the Columbus State Hospital for the Insane, vice Dr. Robert C. Tarbell, resigned.

OKLAHOMA.

Dr. Elmer E. Cowdrick, Enid, formerly of Toledo, Ohio, has been made Territorial Superintendent of Health, vice Dr. L. Haynes Buxton, Oklahoma City, term expired.

The Territorial Board of Medical Examiners, consisting of Drs. Elmer E. Cowdrick, Enid, chairman, Dr. Grant Cullimore, Oklahoma City, secretary, and Joseph A. Overstreet, Kingfisher, treasurer, met for organization at Enid, July 17.

OREGON.

Smallpox is said to be epidemic in Portland. Since May 1 twenty-five new cases have been reported.

The State Board of Medical Examiners examined 20 applicants July 2 and 3, and on July 16 issued licenses to practice to 17 of them.

PENNSYLVANIA.

Drs. J. Purd Kerr and Christopher C. Hersman, of the staff of the South-Side Hospital, Pittsburg, have resigned.

The McKeesport Hospital has been seriously crippled by the cutting down of its appropriation from $37,500 to $14,000. As the hospital is already heavily burdened with debt, this reduction in its resources may necessitate the closure of its doors to all except pay patients.

Blockley Hospital.—The Department of Charities and Corrections, Philadelphia, have asked for bids for the erection of three new buildings for the Philadelphia Hospital, a children's hospital, to cost $35,000; a hospital for communicable skin diseases to cost $35,000 and a maternity to cost $10,000.

Commonwealth Control of Hospitals.—Representative Ford, of Pittsburg, claims that the establishment and absolute control of hospitals by the state would remove the greatest drain upon the resources of the state and render it unnecessary to cut down the appropriations at the end of every legislative session, as is necessary now.

RHODE ISLAND.

Smallpox.—The State Health Board has been aroused by the discovery of 18 new cases of smallpox in the Blackstone and Pawtuxet valleys.

Dr. Joseph N. Roy, Harrisville, has yielded to law and surrendered his certificate to practice after a fierce legal struggle extending over many months.

TEXAS.

The estate of the late Dr. Robert H. Chilton, Dallas, is valued at $75,000.

Dr. John E. McClung, Corsicana, has been appointed health officer of Navarro County.

New Licensees.—The State Board of Medical Examiners has passed favorably on thirty-three candidates for license to practice medicine.

The State Medical Board held its meeting for organization at Austin, July 23, and elected Dr. J. T. Wilson, Sherman, president; Dr. Sam R. Burroughs, Buffalo, vice-president, and Dr. Matthew M. Smith, Austin, secretary and treasurer.

Galveston Medical College.—The following changes have occurred in the faculty of this college: Dr. Henry P. Cooke has resigned the deanship and the chair of pediatrics; Dr. William S. Carter, professor of pathology, will be lecturer on pediatrics; Dr. Allen J. Smith has been made dean; Dr. William Gammon has been promoted from demonstrator to associate in pathology; Dr. Louis E. Magnenat has been made demonstrator of pathology; Dr. M. Charlotte Schaefer has been made demonstrator of normal microscopy; Dr. Kenneth H. Aynesworth has been made demonstrator of anatomy and Dr. Thomas Flavin, emeritus demonstrator of anatomy.

VIRGINIA.

The Newport News Hospital Association has decided to begin the erection of the main building of the proposed hospital immediately.

Plans for the new hospital at Winchester, Va., have been adopted and construction will begin at an early day. Of the $15,000 required all but $1000 has been secured.

The dispensary building at the Norfolk navy yard has been completed at a cost of $10,000, and is a model of its kind. The lower floor is devoted to the surgeon's office, dispensary, examining and operating rooms, storeroom, and the apothecary and his family live in the second story.

Not Proven.—The Board of Directors of the Southwestern State Hospital, after careful investigation of the charges preferred by Dr. Zeb V. Sherrill against Dr. Robert J. Preston, superintendent of the hospital, has found that the evidence does not sustain the charges, and has so informed the governor.

WASHINGTON.

Dr. William L. Ludlow, Seattle, has returned from a six-months' course of study in Europe.

The Board of Health of Seattle has appointed Dr. Frank M. Carroll, health officer and city physician, and Dr. William L. Ludlow assistant health officer.

State Law Upheld.—In the case of the state against Dr. W. D. Meyers, charged with practicing medicine without a license in Spokane County, the defendant was found guilty and fined $50 and costs.

The State Board of Medical Examiners met in Seattle the first week in July and elected the following officers: Dr. William Grant Tucker, Port Townsend, president; Dr. Charles E. Grove, Spokane, vice-president, and Dr. John P. Turney, Davenport, secretary.

GENERAL.

Dr. Milo B. Ward, Kansas City, Kans., died July 28. A more extended notice will be given next week.

Bubonic Plague.—Reports of the plague reach us from an apparently increasing area of the world. In South Africa it is not confined to Capetown alone, but has spread to Maitland, Simonstown and Port Elizabeth, while in Egypt it has broken out in Zagazig, Alexandria, Minich, and sporadic cases at other towns; the Marine-Hospital Service reports 63 cases and 25 deaths at Zagazig alone, up to July 3. In China it is prevalent at different points, but most particularly in the seaport town and island of Amoy, where the estimated number of deaths from plague is 700 weekly in a population of 400,000. At Hong Kong it is at present decreasing. India is still firm in the grasp of the scourge, with weekly and local variations in decrease and increase, but with a steady annual increase. The *Lancet* correspondent gives the 1889 outbreak as consisting of 1336 seizures and 1223 deaths; in 1900 there were 7897 cases and 7373 deaths, whilst this year's list amounts to over 9000 cases and 8000 deaths already. The Marine-Hospital Service reports in all India 7600 cases and 5770 deaths from May 12 to June 8. Its presence in Brisbane and other points in Australia, and the quarantine against that infected port necessitated changes in the movements of the Duke and Duchess of Cornwall. Europe has had a few sporadic cases, notably in the port cities of Glasgow and Marseilles, but its chief danger is by land from Constantinople, where it now exists. Roumania, Bulgaria and Greece have instituted a rigid quarantine against Turkey. In South America, 6 cases have appeared in Asuncion (Paraguay), and Rio Janeiro. Beyond the confines of the continents it has shown itself to a greater or less extent in the following islands: Philippines (112 cases and 91 deaths, from May 11 to June 15 in Manila), Mauritius, Hawaii and Japan.

Plague Reports.

The following are reports of recent autopsies made in San Francisco on those dead from the plague:

Miyo, Japanese female, died July 9, and an autopsy was made the same day. She was taken sick on June 30 along with two other Japanese girls in the same house. There was marked enlargement of the glands in the right inguinal region, reddening and edema on the overlying skin. There was slight enlargement on the left side. The axiliary and cervical glands were not palpable. The intestines were not injected; no fluid in the abdominal cavity. Spleen tore while being removed; was red brown, with here and there splotches on its surface. It was soft and enlarged to over twice its normal size. There was no fluid in the thoracic cavity. Right lung was adherent anteriorly about the apex and base. Pericardium contained 20 c.c. of clear yellowish fluid. Heart showed signs of an old pericarditis. It was about normal in size. The kidneys were somewhat enlarged. The right lung was in a condition of chronic interstitial pneumonia; left lung was normal. The liver was yellowish-red in color, with areas of dark purple. It was normal in size. Slides made at autopsy showed nothing distinctly. Some fluid flowed from a cut made in the right inguinal glands; these glands formed a mass as large as a hen's egg. They were injected and red and contained large areas of coagulation necrosis. No pus exuded upon section. Guinea-pigs inoculated with 1 c.c. of a bouillon culture obtained from the spleen of this girl died 48 hours after with a typical pest infection. The organisms were obtained from the subcutaneous tissue, spleen and heart blood.

Shina, Japanese female, aged 26, was taken sick June 30, died July 9, and an autopsy was made the same day. This girl was seen the day before her death by the writer in consultation through the courtesy of her attending physician. She was a well-nourished but very anemic girl. Temperature was 101.5, pulse 106. She had a distended abdomen, which was slightly tender on pressure. There was considerable diarrhea, and the dejections were involuntary. There was a blowing murmur heard over the apex of the heart during systole.

The glands in the inguino-femoral region on both sides were enlarged, the left side particularly so. The overlying skin was somewhat reddened and edematous, and exquisitely tender on pressure. The mass was not fluctuant. Dr. Ryfkogel, who was present, punctured the gland, and from the serum thus extracted smears were made which showed enormous numbers of bipolar bacilli, decolorizing by Gram's method of staining, and identical in size and form with the bacillus pestis. A blood specimen was taken from the ear lobe, but no bacilli were found microscopically in the smear. The blood count showed a leucocytosis of 27,600, of which the differential count of white cells was as follows: neutrophiles, 91 per cent.; lymphocytes, 6 per cent.; mononuclears, 3 per cent; no eosinophiles. Two basophiles were seen in the thousand counted. The blood gave an immediate characteristic agglutination reaction with a bouillon culture (48 hours) of the bacillus pestis. A guinea-pig was inoculated with the gland juice. This girl died on the morning of July 9, and an autopsy was made in the afternoon of the same day. The posterior and anterior cervical glands, as well as the axillary and popliteal, were palpable. In the right inguino-femoral region there was a firm, somewhat movable mass 5 cm. in diameter, the overlying skin was not inflamed. In the left inguino-femoral region was a large mass. The periglandular edema was more marked on the left than the right. Intestines were moist and distended with gas; spleen was much enlarged; pulp much swollen and soft. Mesentery glands were enlarged and hemorrhagic. The kidneys were enlarged, cortex swollen and markings indistinct. The left ovary was hemorrhagic; endometrium normal; no sign of inflammation in the vagina. The liver was normal in size, cut surface was pale, and several areas showed distinct tendency to hemorrhagic infiltration. The pericardium was normal, pericardial fat abundant. Aortic and mitral valves appeared normal. There was marked congestion of the lungs, and no pleuritic adhesions, and nowhere did they show signs of consolidation. Bipolar bacilli were seen in large numbers on smears from both inguino-femoral enlargement; none were found on smears from the spleen and heart blood. The cultures taken from the gland before death by Dr. Ryfkogel showed in 36 hours a pure culture of an organism identical in its cultural reactions with bacillus pestis. The growth on agar was very viscid and showed the characteristic ground-glass appearance. The organism was transferred to bouillon, Dunham's solution, glucose agar, 3 per cent. salt agar, gelatin, and milk. Microscopic examination of the agar showed growth to be composed of bipolar bacilli, decolorizing by Gram's method. In bouillon it grew in short chains which formed a deposit at the bottom and sides of the tube. The growth in bouillon showed a very characteristic agglutination reaction with anti-pest serum from the Institut Pasteur, the dilution used being 1 to 200. The reaction occurred within ten minutes. No indol was formed in Dunham's solution (test controlled with B. coli communis). Gas was not formed in glucose agar; no alteration could be seen in the milk; gelatin was not liquefied; the characteristic involution forms were present on salt agar.

The guinea-pig inoculated with tissue juice from Shina died in 72 hours, and at autopsy showed the characteristic lesions and distribution of bipolar bacilli seen in experimental pest. A guinea-pig and pigeon immunized with anti-pest serum were inoculated by Dr. Ryfkogel, with a pure culture obtained from this girl, and at the present writing are alive and apparently healthy six days after inoculation. A control pig, although inoculated with one-half the dose of the same culture as the immunized, died in forty hours.

Fuku Inaki, also a Japanese girl, died at the same place on July 11, with clinical history and autopsy findings, similar to the other cases. A pig inoculated from this girl's tissues by Dr. Kellogg died in from seven to eight days, showing typical plague infection.

CANADA.

Dr. **Ethier,** late superintendent of the Notre Dame Hospital, Montreal, has gone to Paris to spend the next three years in study.

The **Protestant Hospital for the Insane at Verdun,** Quebec, is shortly to be enlarged by the erection of two new buildings, one of which will be known as the isolation wing. In it there will be as many as forty private wards with accommodation for nurses. The additions will cost $70,000.

Analyses of Foods.—Mr. Milton Horsey, who has been recently appointed corporation analyst of Montreal, has been making analyses of various and sundry foods used by the citizens of that city. He finds that milk was not well kept, that the drinking water is satisfactory and will compare favorably with the supply of many American cities, that there is abundance of impure ice in use and that certain canned goods, notably lobsters and tomatoes, were quite bad and unfit for food.

Anthrax in Eastern Ontario.—The Department of Agriculture at Ottawa has received reports of outbreaks of anthrax in three different sections of the Province of Ontario. The disease so far is confined to cattle and horses, of which 25 of the former and 4 of the latter have died of the disease in one district. The disease is also prevalent a short distance from Ottawa and precautions are being taken to prevent its spread. The employees of a tannery in the neighborhood are being carefully watched for signs of the disease.

Deaths in Toronto Maternity Homes.—A maternity home on the northern confines of the city has been attracting some little attention the past week owing to the fact that the mortality in the institution has been put down at 50 per cent. This has called attention to the condition of these places in the city proper and the medical health officer has given out some statistics with regard to them. There are fifteen maternity homes in Toronto and thirty-five baby farms, which are all subjected to a very close inspection by a special medical officer, and careful records kept thereof. The babies born in these homes of the city last year number 130, of whom 14 died, 13 were adopted in good homes; the rest remained in the homes.

Barbers in Montreal Object to Association.—At the present time there appears to be no end of trouble among the barbers of Montreal and it is all due to the act passed at the session of the legislature of 1899 incorporating the Barber's Association of the Province of Quebec. For some time past a petition has been in circulation requesting the Lieutenant-Governor to revoke certain clauses of the act. Clauses seven, eight and nine of this petition have particular reference to the hygienic conditions of the shops. Clause nine sets forth their objections to the medical inspection and examination of the employees. This examination, if made seriously, they consider visionary, inasmuch as the barber examined may be contaminated from one moment to another, and to make such examination really useful and serious, it would be necessary to examine the barber after each and every operation, which would be utterly impracticable. Members of the Association have to pay $2 for this medical examination and a further $2 for a certificate.

Toronto Physicians and Professor Koch's New Theory.—Several Toronto physicians have been interviewed with regard to Professor Koch's recent paper. Dr. Sheard, the medical health officer, considered that any statement from Dr. Koch must be received with a certain amount of belief on account of his illustrious and untiring work in that field. He thought that the investigations of the Royal commission appointed in England fifteen years ago clearly showed that there was not so much to be dreaded from the production of tuberculosis through meat and milk as some were inclined to fear. If the statement of Professor Koch were substantiated it would not affect the inspection of dairy and food products in Toronto. Dr. H. B. Anderson, professor of pathology in Trinity Medical College, did not think that the announcement if true would make any difference in the regulations looking to the food products and the sanitary conditions of their source. Dr. P. H. Bryce, secretary of the Provincial Board of Health said that if Koch's statements were true, the saving of cattle from the terrible ravages of tuberculosis was a sufficient justification for the measures that are being taken to stamp out bovine tuberculosis.

FOREIGN.

The Northern Congress of Surgery will be held at Copenhagen, August 29 to 31.

Medical Schools are to be established at Bagdad, Damascus, Smyrna and Adrianople, by a recent decree of the Sultan of Turkey.

An International Medical Congress is being organized to meet at Cairo, Egypt, February, 1902, according to the *Gazette Méd. de Paris.*

Professor Lapersonne, of Lille, has been invited to fill the chair of ophthalmology in the Paris Faculté de Médecine, left vacant by the retirement of Professor Panas on account of the age limit. Summoning a professor to Paris from the provinces is a rare occurrence.

Deaths Abroad.—Dr. Delpeuch, of Paris, connected with the Cochin hospital, a frequent contributor to the medical press.——G. B. Laure, of Turin, assistant professor of anatomy,

whose mounted specimens were awarded a gold medal at medical congresses at London and Genoa.

A New English University Proposed.—It is proposed to found a university in Liverpool by making University College a degree-conferring institution. In 1900 the College had 490 students in arts and science, and 166 in medicine. The nearest university to Liverpool is Victoria University in Manchester, which naturally opposes the proposal.

Royal Honor for Britons.—King Edward recently conferred knighthood on Thomas Smith, F.R.C.S., Deputy Surgeon-General Henry Julius Blanc, and William Henry Bennett, F.R.C.S., and likewise invested them with the insignia of Knight Commanders of the Royal Victorian Order. The following were invested with the insignia of Commanders of the Order; Dr. Donald W. Hood, Mr. John H. Morgan, F.R.C.S., and Mr. Charles Arthur Morris, F.R.C.S.

Italy Opposes Foreign Practitioners.—The British government extended reciprocity of recognition of medical qualifications to the kingdom of Italy last March, as stated by the *Brit. Med. Journal*, but the Italian practitioners are doing their utmost to prevent outside physicians from attending even the foreign tourists. They contend that whatever custom that exists in favor of those holding foreign diplomas was in vogue before the unification of the kingdom and does not hold good now. Recently a graduate of Berne University and clinical assistant to Professor Kocher passed the required final examination in medicine in the University of Pisa, but the faculty, assisted by the Ordine dei Medici, of Rome, have presented resolutions to the Minister of Public Instruction asking that no permission to practice be granted.

German Practitioners' Association.

The Deutscher Aerztevereinsbund, or Practitioners' Association of Germany, is the national organization made up of 302 local societies, with 18,337 members. The total number of physicians in the German empire is about 27,400. The aim of the Bund is to promote the ethical and material interests, and the honor and dignity of the profession. Strictly scientific addresses are not included in the program of the annual meeting or published in the organ of the Bund. The annual meeting was held this year at Hildesheim, June 28, with Professor Liebker in the chair. The Bund has increased by 9 societies and 1751 members since last year, and 195 of the societies were represented at the meeting or Aerztetag, by 175 delegates, representing 16,473 votes, an increase of 57 delegates over last year. The income of the Bund in 1900 was 72,852 marks, the expenses nearly 50,000. The organ of the Bund is an expense instead of being a source of income, and certain members urged extension of the advertising department, as a journal reaching more than 18,000 persons ought to be a good advertising medium. The president, in his address, voiced the general disapproval of the profession of the new government regulations affecting admittance to the medical courses mentioned in THE JOURNAL of July 6, p. 28, and of July 20, p. 208. The amendments proposed and submitted by the Bund were disregarded by the authorities. The address on the subject of "Quackery" stated that it was on the increase in Germany and that physicians are apathetic in the matter. Only 903 replied to the 6313 circulars of inquiry sent out. A number of serious physical injuries resulting from quack practice were related and the members urged to collect such examples. The authorities seem to be indifferent and the laws are inadequate to protect the public, but the Berlin physicians have waged an effective warfare against the titles paraded by charlatans.

THE BATTLE WITH THE CLUBS.

The chief interest of the meeting centered in the discussion of the attitude to be observed toward the new Leipsic Medical Union, the "Verband der Aerzte Deutschlands zur Wahrung ihrer Wirthschaftlichen Interessen." This society was organized by those who were dissatisfied with the lukewarm methods of the Aerztevereinsbund in regard to the burning question of the Krankenkassen, the sickness insurance societies, clubs, etc., which grind down their medical officers to the lowest possible rates. The *Allg. Med. Central Zeitung* of June 29, states that in 1899 there were 22,872 of these clubs, with a membership of 9,155,582. Their cash balance at the end of that year was practically $30,000,000. These figures show the magnitude of the "battle with the clubs." The Leipsic Union was organized for the purpose of procuring a fund sufficient to inaugurate a general strike throughout the country of all the medical officers of the Krankenkassen, to clear the ground for a new and more equitable arrangement than now prevails. The idea of a general strike was soon abandoned, however, and the Union aims now to assist individual physicians or a single group against the extortions of the Krankenkasse, supporting them materially and morally in case they find it necessary to resign their positions, and bringing strong influence to bear to prevent other physicians from stepping into their places. The Union was hailed by many as the long-sought means of relief from the oppression of the Kassen, which the existing organizations had neglected or failed to oppose with any effectiveness. The Union now numbers 1500 members. Each contributes a mark a week toward the fund. All have confidence that the promoters of the Union are bending every energy to realize their ideal, although it has not as yet accomplished anything except, perhaps, to arouse the Aerztevereinsbund to renewed energy.

The latter voted at the annual meeting to establish a central office at Berlin with a physician in charge, on a salary of 8000 marks and a reserve fund of 10,000 marks to draw on. The duties of this official representative of the Bund are, 1, to promote the ethical and material interests of the profession and defend them against attacks; 2, to edit the organ of the Bund and serve as general secretary; 3, to supply information on legal questions affecting the profession and its relations to the authorities, the legislature, the professional and lay press, etc., and to assist in the organization of new sub-societies; 4, to endeavor to have the sums paid physicians by the Krankenkassen increased, to strive to have "free choice of the physician" introduced by the Kassen, and to combat quackery in every possible way; 5, to guard the interests of physicians in contracts with the Kassen and other corporations, and 6, to secure positions for German physicians at home and abroad. After long discussion the meeting voted to appoint a delegate to represent the Bund on the managing board of the Leipsic Union, but a resolution advising members to join the Union was voted down. It was claimed that the aims and intents of the new Union are practically identical with those of the Bund and that, instead of organizing new societies and splitting up the united forces of the profession, all should rally to the existing association and strive to improve and perfect its methods with loyalty to the Bund, to each other and to the profession as a whole.

LONDON LETTER.

Army Medical Reform.

Considerable dissatisfaction is felt in the profession as to the constitution of the committee appointed to consider the future organization of the Army Medical Service. The subject has already been referred to in THE JOURNAL. The committee does not contain a single senior officer of the Army Medical Staff, yet two combatant officers have been appointed. This is only the old story of slighting as much as possible the army surgeons by the military authorities. Mr. Broderick, the secretary for war, has promised "drastic reforms" of the medical service. It is curious that while the Commission of Investigation into the South African hospitals found that the principal defect—undermanning—was due to the failure of the military authorities to comply with the request of the medical staff for more men, and while the army surgeons have on the whole been shown to be perfectly competent the combatant officers have often proved to be gravely deficient in tactics and strategy, yet not a word has been heard of "drastic reforms" of the army itself. The reason is not far to seek. The army is controlled by the so-called upper classes, and under the present conservative government effete caste prejudices have full sway. The attitude of the high officials towards the surgeons has always been hostile. Again and again, reforms by which their status has been improved have been won with the greatest difficulty, only with the help of pressure from the medical profession outside. The South African war has shown the need of many further reforms. The medical staff should be placed in a position of greater independence and have more autonomy. The question of improving the knowledge of army surgeons urgently calls for consideration. To obtain this result, more secure status, better pay and leave of absence for study from time to time at hospitals must be granted.

The National Hospital for the Paralyzed and Epileptic.

The long struggle between the medical staff and the board of this famous hospital, which has been described from time to time in THE JOURNAL, has at last come to an end. The request of the staff for two seats on the board has been granted. The anomalous office of secretary-director by which the whole power of management was placed in the hands of a paid official, who was at once master and servant of the institution, has been abolished. This individual, whose attempt to ride rough shod over the medical staff has been the principal cause of the trou-

ble, has resigned. Naturally, having ruled for so long, he did not like to become simply the secretary of the hospital. In the report of the committee of inquiry which has been unanimously adopted, it is declared that there are no foundations for the fears entertained that the character of the hospital as a religious and philanthropic institution will be imperiled by the presence of two medical men on the board—an assertion made by the latter body.

Blindness from Sodium Salicylate.

At the Ophthaimological Society Mr. Simeon Snell related the following very rare case: A girl suffering from acute articular rheumatism was given sodium salicylate. At 7.30 a. m. she awoke and said that everything was dark in front of her. When her physician visited her between 11 and 12 she could not distinguish light from darkness. Next day, Mr. Snell saw her and found her perfectly blind. Ophthalmoscopic examination revealed nothing abnormal. On the following day when she was succumbing to endocarditis and pericarditis she was again examined with negative result. She died that evening without return of vision. The total quantity of sodium salicylate taken was 140 grs. at least, possibly 160 grs. in 60 hours. Mr. Snell thought there could be very little question that the sodium salicylate was the cause of the blindness.

Rupture of the Uterus in Placenta Previa: Treatment of Rupture of the Uterus by Gauze Packing.

At the Obstetrical Society Mr. J. P. Maxwell, of Amoy, China, read a paper on spontaneous rupture of the uterus in placenta previa, of which he had seen three cases. In the first the woman died undelivered within a few minutes of the rupture; in the second the uterus was found ruptured posteriorly after delivery and there was dangerous hemorrhage, but recovery took place after antiseptic gauze packing of the rent. The following is the third case: A Chinese woman, aged 23, had poor health during pregnancy. At term she had weak pains and the cervix did not dilate well, especially posteriorly. The edge of the placenta was felt behind. Twelve hours later, the cervix had closed and admitted one finger with difficulty. Slight hemorrhage occurred. After fourteen days, labor came on, but the os did not dilate well behind. When it was nearly dilated severe hemorrhage began. The membranes were ruptured and the child was born in ten minutes without assistance. The moment it left the vagina blood simply poured out and death seemed imminent. The speaker turned the patient on her back, expressed the placenta, and forcibly pressed the uterus downwards and backwards. Ergot was administered hypodermically and by the mouth. The hemorrhage, which had been checked by the pressure, came from a rent in the posterior wall of the uterus and cervix. The finger could be passed into Douglas's pouch. The rent was packed with gauze wrung out of biniodid of mercury lotion and pressure was kept up on the uterus for two hours. The gauze was removed in twenty-four hours. No douche was given and recovery was uneventful. The child was puny, weighing 5 pounds. There was placenta previa marginata and the rupture had occurred through the entire cervix and lower portion of the placental site. In cases of placenta previa the wall of the uterus is not strong, and in some cases fatty degeneration of the uterus muscle has been discovered, and severe pain is apt to start a rent, which then enlarges mechanically.

In the discussion which followed, Dr. Herbert Spencer expressed his appreciation of the treatment by gauze-packing. Last year in a paper read before the Society he called attention to this method of treating rupture of the uterus and related four successful cases. In his previous experience all the cases of rupture of the uterus (8) were fatal. At present abdominal section is usually recommended for complete rupture of the uterus; but that operation, especially if followed by hysterectomy, is generally too severe for a patient suffering from rupture of the uterus. If others with experience of the accident would publish all their cases, Dr. Spencer has little doubt they would compare unfavorably with those of gauze-packing.

Dr. Armand Routh had seen one case of rupture of the uterus with placenta previa. The patient was eight months pregnant and had several attacks of hemorrhage. Under deep anesthesia the cervix was rigid and it was not easy to insert a finger. Anterior marginal placentation was found. The tongue of placenta was separated from the lower uterine segment, podalic version was performed, and the leg was brought down to the half-breech, which was left *in situ* for nature to complete the delivery. In about twenty-four hours labor pains came on and the child and placenta were spontaneously expelled. In two days septicemia was evident and the patient's physician then found that the uterus was ruptured anteriorly. The patient died.

The president (Dr. Horrocks) thought that gauze packing was the best treatment of rupture of the uterus. It was the most successful in saving life. He described a case of most extensive rupture treated by packing which was renewed under chloroform every day for twelve days, then less frequently. The patient after this became very ill, and at last a large slough was extracted from the right broad ligament. Recovery ensued.

PARIS LETTER.

Arterial Tension in Neurasthenic Patients.

The variations of arterial tension have been studied by Professor Potain, and especially by one of his former house physicians, Dr. Vaquez, and though the researches on this subject were at first confined to a relatively narrow field, they have of late been extended to other regions. Dr. Fleury read a report recently on this subject to the Academy of Medicine, and he said that neurasthenic patients might have a low tension, and they would in such a case be improved by rest and tonics, whereas there were others, suffering at the same time from symptoms of gout, uricemia, alcoholism, and diabetes, who showed excess of tension and were cured by all that would favor the elimination of toxins such as exercise, lacto-vegetarian diet and diuretics. It would, therefore, be advisable to consult the condition of the patient from this point of view before formulating a treatment. At the Society of Therapeutics Professor Sluchard, the well-known heart specialist, said there were three varieties of hypertension: 1. Arterial hypertension, which was due to arteriosclerosis, required a special treatment, consisting of a lacto-vegetarian diet, massage, veratrum viride, and nitrite of amyl. 2. Pulmonary hypertension, brought on by mitral stenosis, caused what is called palpitating arythmia. 3. As for portal hypertension, the best treatment consisted in the use of a lacto-vegetarian diet and abdominal massage.

Antitetanic Serum—Four Good Results.

In one of the last meetings of the Society of Surgery, this serum did not seem to elicit much enthusiasm from certain members of the Society. A week later, however, Dr. Tuffier cited an observation furnished him by Dr. Letoux, of Vannes, who, in a case of lockjaw resulting from a wound of the foot, made two injections of 10 cubic centimeters into each hemisphere. The symptoms observed began to be less apparent, and the patient was quite cured seven days after. This proved to be the fourth case Dr. Letoux had treated in this manner with success.

Cocain in Sciatica.

Intrarachidian injections of cocain have been used recently in Paris as a method of treatment of sciatica, and Dr. Lougues has just tried it in injection outside the dura mater. Two centigrams of cocain were injected. The patient had been suffering from sciatica since five months. After the first injection there was immediate relief, but the pain came back after a time. A second injection was followed by a complete cure, which has already lasted five weeks. Dr. Achard said that he made both sorts of injections, and he found that the intrarachidian injections were more active, and relieved the patient sooner. According to Dr. Lamy, the epidural method is safer, when the patient can not be kept in bed a certain length of time.

Case of Death After Medullar Cocainization.

Dr. Broca, surgeon of the Paris hospitals, has recently communicated to the Society of Surgery a case of death after spinal cocainization furnished him by Dr. Prouff. The patient, a woman 62 years old, thought she had a foreign body in one of her feet. She was suffering at the same time from chronic arthritis of the hip-joint and knee, and Dr. Prouff did not hesitate to make an injection of one cubic centimeter of a 1 per cent. solution of cocain. The incision in the foot was readily carried out, and the patient was able to go home on foot an hour after the injection was made, and go up several flights of stairs. Dr. Prouff was called to see his patient in the afternoon, and found her suffering from most intense pain in the back. The pulse was extremely weak and there was extreme paleness of the face. Dr. Prouff had the patient get up and walk, and saw that there was no motory or sensory trouble. He did not prescribe any treatment. The patient died next day. This would seem to be a bona fide case of death after rachi-cocainization, and would tend to show, as Dr. Broca has said, that such a method should not be entrusted to everyone. Dr. Nélaton, the son of the celebrated surgeon

of Napoleon III., said that he had had occasion to witness recently very severe cardio-pulmonary symptoms in a patient who had been anesthetized in this manner. There was a good deal of dyspnea and pallor, and a weak and rapid pulse. These accidents lasted a whole day and were in part relieved by repeated injections of caffein. The solution of cocain was analyzed, and was found to contain elements resulting from the disintegration of the cocain.

Correspondence.

Patent for Vaccination.

BALTIMORE, MD., July 30, 1901.

To the Editor:—Probably the only patent ever granted for vaccination in this country is one I recently found in the archives of the Medical and Chirurgical Faculty of the State of Maryland, which is rich in medical documents of great historical interest to the state. The patent is dated July 10, 1822, and is granted to Dr. James Smith, of Baltimore, for a new and useful improvement in the art of vaccination. It was good for 14 years and cost the patentee $30. It was signed by James Monroe, president; John Quincy Adams, secretary of the state, and Wm. Wirt, attorney-general, and contains the seal of the United States. It is upon a large sheet of parchment. The following is an abstract of this unique document: "The Variola Vaccina or kine pock and the Variolæ Pestilentia or smallpox are both perfect plants that may be classed according to the system of Linnæus in the cryptogamous class, order Fungi (of same genus, but different species) of the vegetable kingdom. They are respectively produced each from their own proper seed and they can not be produced in any other way. When mature and perfect they exist in the form of crusts or scabs, which are naturally organized and uniformly of a like appearance, and may be distinguished from any other scabs by their shape, size, color, texture, and consistence. The appearance of the vaccine crusts is a true criterion of a true vaccination and one can so determine without having seen the case. Vaccine crusts may be preserved for the longest time by setting them in bees-wax or wrapping them in waxed paper. Vaccine matter in any other form may be preserved in the same way. Vaccine matter may be taken at any time from a fresh vaccine crust by applying a little water to it and then rubbing it with any rough or sufficiently hard instrument to break its natural texture. When thus grated or filed, the vaccine matter may be put up on small pieces of glass or plates of ivory or any other hard and smooth substance to which it will adhere when dry and in this state it may be transmitted by letter to the most distant places. When put up on glass, ivory, etc., as above, the vaccine matter taken from any genuine crust may be known and distinguished by its being less transparent than matter taken from the arm on the 8th day, as commonly recommended."

The following is the record of Dr. James Smith taken from my forthcoming volume, "The Medical Annals of Maryland": "Smith, James, deceased, born Elkton, Cecil County, Maryland, 1771, A.M., Dickinson College, 1792. Pupil of Benjamin Rush, 1794. Said to have taken M. D. at University of Pennsylvania. A founder and attending physician to Baltimore General Dispensary, 1801-7. Resident physician to Baltimore Almshouse, 1800-1. Began vaccinating in Baltimore, May 1, 1801, and opened a Vaccine Institute there March 25, 1802. State vaccine agent, 1809-13. United States vaccine agent, 1813-22. Editor of *Vaccine Inquirer*, 1822. Treasurer Medical and Chirurgical Faculty of Maryland, 1811-17. Died Pikesville, Baltimore County, Maryland, June 12, 1841. No man in America did so much to spread the benefits of this great discovery over the land, and Dr. Smith's services entitle him to be held in everlasting gratitude. He may be justly called the 'Jenner of America.'"

EUGENE F. CORDELL, M.D.

Treatment of Laryngitis.

ST. LOUIS, July 24, 1901.

To the Editor:—In an article on "The Treatment of Laryngitis," which appeared in THE JOURNAL of July 20, page 180, the author, in speaking of pachyderma laryngitis, ascribes the salicylic acid method of treatment to Fein. If I mistake not, Dundas Grant was the first laryngologist to advocate this method of treatment in 1897, and I am under the impression that Fein gives Grant credit for first advocating this method. Several years ago I had the privilege of seeing Grant treat a number of these cases thus, with most excellent results. Grant's method of treating these cases and results can be found in an article by him in the *Journal of Laryngology, Rhinology and Otology*, October, 1899. Very truly,

W. B. SHIELDS, M.D.

Association News.

New Members.

The following is a list of new members of the American Medical Association for the month of July, 1901:

ALABAMA.
Steiner, S. F., Montgomery.

ARKANSAS.
Miller, Otey, Fayetteville.
Wood, H. D., Fayetteville.
Henderson, A. G., Fayetteville.
Young, F. B., Springdale.
Hardeman, D. R., Little Rock.
Foltz, Jas. A., Ft. Smith.

CALIFORNIA.
Barlow, W. Jarvis, Los Angeles.

COLORADO.
Sanford, Jas. Brownlee, Castle Rock.

CONNECTICUT.
Shepard, Durell, West Haven.
Gaylord, Chas. W., Branford.

GEORGIA.
Smith, E., Atlanta.

ILLINOIS.
Collins, Rufus J., Chicago.
Holmes, Rudolph W., Chicago.
Betts, Geo. S., Banner.
Cuthbertson, Wm., Chicago.
Smith, W. A., Galena.
Hopper, H. C., Galesburg.

INDIANA.
Norris, Sam'l E., Anderson.
Gobe, Henry E., Indianapolis.

IOWA.
Mueller, J. A., New Vienna.
Tyler, Edw. K., Muscatine.
Bennett, Theophilus W., Lenox.
Dewitt, Chas H., Glenwood.

KANSAS.
Richard, Chas., Ft. Leavenworth.

KENTUCKY.
Stallard, J. M., Sparta.
Hummel, J. L., Jeffersontown.
Drake, John W., Louisville.
Kelsall, O. H., Louisville.
Hobbs, P. A., Normandy.
Kinnaird, J. B., Lancaster.

MARYLAND.
Hardcastle, Hughlette, Baltimore.
Kemp, C. Percy, Kent Island.
Simpson, G. W., Baltimore.

MEXICO.
Gregory, Veedo B., Tampico.

MASSACHUSETTS.
Flewelling, Douglas S., Summerville.
Potter, Lester F., New Bedford.

MICHIGAN.
Davis, J. E., Detroit.
Moll, G. W., Foster City.
Orr, Geo. W., Lake Linden.

MINNESOTA.
Persons, C. E., Marshall.
Cochrane, Wm. J., Lake City.
Mayo, Chas. H., Rochester.
O'Hara, J. J., Alma City.
Williams, Henry L., Minneapolis.
Valin, Honore D., St. Peter.
Rothrock, John L., St. Paul.
Wilcox, Hamilton H., Albert Lea.
Edmunds, Ira Leslie, Clearwater.

MISSISSIPPI.
Anderson, Wm. J., Increase.

MISSOURI.
Lane, J. W., Linneus.
Bradbury, Richard M., Maryville.
Halman, J. H., Hartford.
Haynes, Lee, Mendota.
Buchanan, J. Robt., Nevada.

MONTANA.
Bernheim, L., Butte.

NORTH DAKOTA.
Bennett, Chas. E., Aneta.
Sihler, W. F., Devil's Lake.

NORTH CAROLINA.
Goodwin, Andrew J., Raleigh.

NEW MEXICO.
Hart, T. N., Raton.
Pearce, John F., Albuquerque.

NEBRASKA.
Talboy, Wm. R., Newcastle.

NEW JERSEY.
Allen, Chas. L., Trenton.

NEW HAMPSHIRE.
Antholne, I. G., Nashua.
Hodsdon, B. F., Manchester.

NEW YORK.
Reed, Albert, Highland.
Sturtevant, Jeremiah R., Theresa.
Stillwell, Alex., Dwaarkill.
Johnson, W. D., Batavia.
Schofield, E. A., Bemus Point.
Schofield, E. M., Jamestown.
Kaufmann, Franklin J., Syracuse.

OHIO.
Devers, A. B., Cincinnati.
Haarlammert, Chas. J., Loveland.
Woodford, Erwin W., Cleveland.
Howell, W. E., Rio Grande.
Swartsel, C. S., Cincinnati.
Smith, B. Decatur, Cincinnati.

OREGON.
Brooks, F. M., Silverton.

PENNSYLVANIA.
Harding, R. A., York.

SOUTH DAKOTA.
Alway, Robt. D., Aberdeen.
Rock, Henry J., Aberdeen.

TENNESSEE.
Duncan, Wm. A., Chattanooga.
Drouillard, L., Memphis.

TEXAS.
Moore, Jno. Thos., Galveston.
Baze, R. J., Mason.
Vinyard, Geo. T., Crafton.
Cummings, H. W., Hearne.
Taylor, M. A., Honey Grove.
Jones, Robt. Harrison, Will's Point.
Smith, Forrest B., Houston.
York, J. B., Brenham.
Moorhead, John D., Levita.
Brown, John R., Hutto.
Hall, Chas. M., Rico.
Berrey, D., San Antonio.

VIRGINIA.
Irving, Paulus A., Richmond.
Firebaugh, T. C., Harrisonburg.

WEST VIRGINIA.
Pritchard, Thos. J., Huntington.

WISCONSIN.
Lasche, P. G., Milwaukee.
Gramling, Henry J., St. Martins.
Mason, Geo. Franklin, Milwaukee.
Loops, Walter A., Milwaukee.
Connell, J. B., Fond du Lac.
Wehle, W. J., West Bend.

Miscellany.

Temperature of Mouth and Rectum.—Dr. M. S. Pembrey, according to the *Brit. Med. Jour.*, has been experimenting upon the effect of muscular work on the temperature of healthy men. The temperature of the rectum or urine may rise as high as 38.5 C. (101.3 F.) during muscular work without causing any distress. The rise of the temperature of the mouth is hindered by the inhaled air and the loss of heat by radiation and evaporation of sweat from the face and neck.

Such is Fame!—The *New York Times* magazine supplement for June 16 is responsible for the following: "Some years ago," said Bishop Potter, in a recent speech, "I was traveling in Minnesota. A man approached me on the railway platform and scanned my features closely. 'Excuse me,' he said, finally; 'but haven't I seen your picture in the papers?' I was compelled to confess that he might have done so. 'I thought so,' continued the inquisitive one. 'May I ask what you were cured of?'"—*N. Y. Med. Journal.*

Test of Leukemic Blood.—Sabrazés states that a drop of blood from a normal subject mixed with twenty drops of pure or distilled water, produces a clear, reddish fluid as the red corpuscles are instantly dissolved. But if the blood is from a patient with myelogenic leukemia, the fluid remains turbid and opalescent. The white corpuscles are not destroyed by the water and remain in suspension, rendering it less limpid than the solution of normal blood. The same phenomenon would probably occur in case of much leucocytosis from any cause.

Research on the Hematology of Typhoid Fever.—An article in a recent issue of *Sperimentale* describes the results of the repeated examination of the blood of eighteen patients with typhoid fever. The red corpuscles progressively diminished in number; no leucocytosis occurred. If noted, it indicated some complication. The polynuclears and the lymphocytes progressively diminished in numbers, but increased again as convalescence commenced. The eosinophiles sometimes vanished completely during the fever, but reappeared in progressive numbers as recovery progressed.

Subcutaneous Injections for Relief of Vulvar Pruritus.—Siebourg of Barmen has been very successful in the relief of rebellious cases of vulvar pruritus with local subcutaneous injections of 300 c.c. of a very weak solution of cocain or phenic acid. The nature of the fluid is of less importance than the quantity. It lifts the skin and pulls on the nerve terminals, thus benumbing them and abolishing the pruritus. He reports in the *Cbl. f. Gyn.* of June 27, several cases of vulvar, anal and other pruritus relieved for a week or longer by this means, which can be repeated as required, combined with local applications until cured.

The Cedron Seed in Yellow Fever.—Dr. S. H. Hodgson, of the Marine-Hospital Service, at Progreso, Mexico, in his report of July 8, gives the following account of this bean: Among the remedies used in Central and South America as an antidote for the stings of insects and the bites of snakes, the seed or bean of the cedron has been found to be a specific. A tincture is made from the grated or mashed seed and is also made into a fluid extract. He made a tincture from the beans and used it as an antidote for stings of insects and the bite of a snake, and found that the action was almost immediate and the relief complete. The antitoxic properties of this remedy were so great that he thought that it might be of some benefit in yellow fever, and had an opportunity to try it in several cases of that disease, and from the results concluded that it is as specific for yellow fever as quinin is for malaria. The experiments with the drug were under the most unfavorable circumstances. He was the government physician stationed at Jiminez, Costa Rica, at the time, and his patients were the native laborers on the near-by farms. Their surroundings were very insanitary, and the only nurses available were uneducated, unclean, and, as a rule, ignorant. The tincture was homemade, not guaranteed to be antiseptic, and of very uncertain strength. Dr. Hodgson kept no notes of the cases treated, and about the time that he realized that the remedy was valuable the epidemic played out, and there was no more material to experiment on. Every case that he treated with the tincture recovered. It relieved the headache, stopped the nausea, and in the cases where it was injected early in the disease there was very little congestion. The tincture was used in hypodermic injections of about 20 minims three times a day.

The Quantity of Water in Foods.—It is not very generally realized how much water there is in solid food. Certain it is that no natural food is without water, varying in amount from 5 to 97 per cent., or only 3 per cent. short of pure water itself. Milk, of course, must be taken as the type of a complete food and yet it contains, even straight from the cow, very nearly 90 per cent. of water, or, to be more accurate, from 87 to 88 per cent. That is to say, more than four-fifths of milk consist of water, and as this is the condition in which it is naturally furnished the inference is that the fats, the sugars, and the proteids were intended to be taken in a diluted state. Indeed, the composition of other foods would teach the same thing, although, paradoxical as it may seem, some solid foods contain more water than does milk. This is especially true of vegetables and fruits. Thus the turnip contains over 90 per cent. of water, the cabbage nearly the same amount, and the cucumber and the vegetable marrow about 95 per cent.; whilst amongst fruits the strawberry contains nearly 90 per cent. of water, the apple 82 per cent., and grapes 80 per cent. Even the various meats used as food contain an amount of water far in excess of the amount of solid constituents. Thus three-fourths of beef and mutton consist of water. The housekeeper, perhaps, scarcely realizes when consulting the butcher's price-list that three-fourths of the meat are water and are paid for with the rest at the rate of a shilling or more per pound. Lamb contains less water, namely 64 per cent., pork still less, 60.9 per cent., and bacon only 22.3 per cent. It would appear that as the flesh foods increase in the amount of fat the proportion of water, as a rule, diminishes. Coming to birds, the flesh of the fowl and duck contains about 70 per cent. of water and that of the pigeon 75 per cent., while the flesh of the goose contains only 38 per cent., the last being another example of the fat increasing with a corresponding diminution in the proportion of water. Fishes contain from 40 to 80 per cent. of water. The egg, one of the most powerful of nutritives, contains 65.5 per cent. of water, the white, consisting of 86 per cent. and the yolk of 50.9 per cent. The latter, of course, is the more nourishing part. As a rule foods containing a small proportion of water are not fit for human consumption until they are cooked, which commonly means reducing them to a digestible state by adding water and boiling or baking, and so when they are actually partaken of they contain a good percentage of water. Wheat flour, for example, contains only 12 per cent. of water, while bread contains nearly 50 per cent. It would appear to be necessary, therefore, that food should be in a decidedly moist condition before it is fit for use, and thus water plays a rôle in food which at first sight perhaps does not seem evident. Bacteria can not live or act except under a wet environment and chemical change under absolutely dry conditions is impossible; therefore without moisture life would cease and the great vital processes would come to an end.—*The Lancet.*

Saline Infusion in Chronic Anemia.—O. Kose states that the improvement in five cases was so striking that he considers himself justified in proclaiming that the injection of physiologic salt solution induces a vigorous reaction on the part of the organism in chronic anemia. The temperature rises, fever may follow, the pulse is stronger and all the secretory organs are stimulated in their functions. After a number of injections a rapid regeneration of the blood corpuscles ensues and all the physical forces feel the beneficial effect, especially

the cells of the blood forming organs, while the sluggish circulation is roused to new activity.

Curability of Leprosy.—Ehlers states in the new international periodical *Lepra*, 1, 4 to 6, that he found two cases of complete, spontaneous recovery in his study of leprosy on the island of Crete. Danielssen and Lie have reported thirty permanently cured in the course of their long experience at the Bergen leper hospital. Ehlers has been investigating the Guber springs at Srebrenitza, Bosnia, which for ages have had the reputation of being a cure for leprosy. He is amazed and delighted at their unmistakable curative influence. The ulcerations healed over and the nodules and all symptoms disappeared under a course of these waters, internal and external. Glueck of Serajevo also describes a series of similarly successful results of the treatment of leprosy at the Guber springs.

Alcohol Fomentations in Pleurisy with Effusion and Arthritis.—The stimulation of the natural recuperative forces by the local, prolonged application of alcohol has been found extremely beneficial in pleurisy with effusion, articular rheumatism and also in acute gout. Burwinkel reports in the *Allg. Med. Centztg.* of June 1, the application of an alcohol compress over night banished the pain in a peculiarly severe and rebellious case of articular rheumatism. A pleuritic effusion which had persisted unmodified by any measures, rapidly subsided after four applications of alcohol for two hours each. The relief obtained in two cases of gout surpassed that secured by other measures in years of experience. He describes several other cases benefited in the same way.

The Three Hypertensions.—Huchard has recently been calling attention to the three hypertensions—the arterial, the pulmonary and the portal. The arterial is the condition preceding sclerosis, the only manifestation being the increased arterial pressure. THE JOURNAL has previously cited his views in regard to the necessity of energetic treatment of this antesclerosis. Pulmonary hypertension occurs in gastric affections and in the mitral stenosis of arteriosclerosis. The chief symptom is palpitating arrythmia, aggravated by digitalis. The third hypertension is the portal stasis or abdominal plethora, the frequent cause of enlargement of the liver, of intestinal disturbances, recurring bronchitis, torpid kidneys, hemorrhoids, obesity, etc. The portal stasis immobilizes a large amount of blood in the abdomen and thus entails various symptoms from the resulting anemia, arterial hypotension and auto-intoxication from the hepatic insufficiency. It is also one of the principal factors of the disturbances of the menopause and of obesity from anemia.

Married.

MAYER SHOYER, M.D., Lawrence, Kas., to Miss Edna Denton, Leavenworth, July 18.

DANIEL E. EISELIN, M.D., to Miss Mabel E. Brown, both of Shortsville, N. Y., July 18.

EUGENE WORTHEN, M.D., to Miss Jessie B. Davison, both of Holderness, N. H., July 12.

THOMAS E. MACAULEY, M.D., Gilberts, Ill., to Miss Amanda A. Swanson, Genoa, Ill., July 17.

GEORGE D. BRINKMAN, M.D., Springfield, Ohio, to Miss Anna Masefield, Columbus, Ohio, July 16.

WILLIAM W. RUCKS, M.D., Guthrie, O. T., formerly of Rome, Tenn., to Miss Martha Gibson, Nashville, July 16.

Deaths and Obituaries.

George A. Blanchard, M.D., University of Pennsylvania, Philadelphia, 1895, who served as assistant surgeon in the Thirteenth Pennsylvania Infantry, U. S. V., during the Spanish-American war, died at his home in Scranton, Pa., July 24, after an illness of three weeks, from typhoid fever, aged 35.

James H. Southall, M.D., University of Louisiana, New Orleans, 1861, died at his home in Little Rock, from cancer of the tongue, July 22. He was a member of the American Medical Association, and formerly held the chair of theory and practice of medicine in the University of Arkansas.

Joseph R. Caldwell, M.D., University of Pennsylvania, Philadelphia, 1867, late state quarantine physician at Marcus Hook, Pa., died, July 21, in Upper Chichester Township, after a long illness. He was a member of the American Medical Association.

George D. Ramsey, M.D., Jefferson Medical College, Philadelphia, 1852, a veteran of the Mexican war and a pioneer physician of Illinois, died at his home in Xenia, July 18, aged 77. He was formerly a member of the Illinois State Legislature.

Washington B. Remington, M.D., Philadelphia University of Medicine and Surgery (now extinct), 1871, died suddenly at Rochester, N. Y., July 19, aged 57. He was a veteran of the civil war, having served in the 138th New York Volunteers.

Addison S. Moon, M.D., Western Reserve University, Cleveland, 1884, a member of the American Medical Association, and a practitioner of Beaver Falls, Pa., died at Hot Springs, Ark., after a long illness, July 17, aged 42.

T. W. Leftwich, M.D., University of Virginia, Richmond, who has been in failing health for some time, died in Bedford City, Va., July 14, aged 70. During the civil war he served as a surgeon in the Confederate service.

H. E. Raub, M.D., Pennsylvania Medical College, Philadelphia, 1857, died at Quarryville, Pa., July 20, aged 71. He was the first burgess of Quarryville borough, and was prominently identified with educational affairs.

William A. Mitchell, M.D., University of Louisiana, 1868, formerly a member of the American Medical Association, and a promient physician of Eufaula, Ala., died at his home in that place, July 15, aged 53.

John C. Beach, M.D., Berkshire Medical College, Pittsfield, Mass. (now extinct), who for many years practiced in Springfield, Mass., died at the home of his daughter, in St. Louis, Mo., July 23, aged 84.

Donald W. MacDonald, M.D., University of Vermont, Burlington, 1898, died at his home in Brookline, Mass., July 21, from concussion of the brain, received in a bicycle accident, aged 42.

Lawrence L. Wolff, M.D., Jefferson Medical College, Philadelphia, 1880, died from Bright's disease, July 21, at his home in Philadelphia. He was on the staff of the German Hospital.

Joseph T. Pero, M.D., College of Physicians and Surgeons, Baltimore, 1891, died at his home in Indian Orchard, Mass., from pulmonary tuberculosis, July 19, aged 34.

James L. Taylor, M.D., Northwestern Medical College of St. Joseph, St. Joseph, Mo., 1882, died July 18, after a brief illness, at his home in St. Joseph, aged 45.

Adolph W. Dunbar, M.D., Bellevue Hospital Medical College, New York, 1897, died from typhoid fever, at his home in Brooklyn, N. Y., July 20, aged 28.

Charles E. Cooper, M.D., Cooper Medical College, San Francisco, 1889, died of myocarditis, at his home in San Francisco, July 21.

James W. Wright, M.D., Medical College of Indiana, Indianapolis, 1888, died at his home in Fairmount, Ill., July 17.

Charles A. Mohr, M.D., University of Alabama, Mobile, 1884, formerly of Mobile, died at Asheville, N. C., July 17.

Elnathan J. Bond, M. D., Rush Medical College, Chicago, 1865, died at his residence in Ord., Neb., July 17, aged 73.

George Schmidt, M.D., Toronto School of Medicine, 1874, died at his home in Milwaukee, Wis., July 18, aged 53.

Charles G. Robertson, M.D., University of Buffalo, 1862, died at his home in Clarkston, Mich., July 18, aged 70.

John A. Westerhold, M.D., University of Halle, Germany, 1873, died from apoplexy, at Ojibwa, Ont., July 18.

Societies.

Laclede County (Mo.) Medical Society.—This Society met at Lebanon, July 5, and re-organized by electing Dr. James McComb, president, Dr. James M. Billings, vice-president, and Dr. O. N. Carter, secretary and treasurer.

Scott County (Iowa) Medical Society.—The annual meeting of this Society was held at Davenport, July 18, and the following officers were elected: President, Dr. John H. Culp; vice-president, Dr. Frank N. Stiles; secretary, Dr. John Cantwell; treasurer, Dr. Charles H. Preston.

Wabasha County (Minn.) Medical Society.—At the meeting of this Society, held at Wabasha, July 11, the following were elected for the ensuing year: Dr. Leonard F. Claydon, Mazeppa, president; Drs. French, Plainview, and J. F. Bond, Wabasha, vice-presidents; Dr. William F. Wilson, Lake City, secretary and treasurer. The next meeting will be held in Mazeppa.

Multnomah County (Ore.) Medical Society.—This Society was organized at Portland, July 5, and the following officers were elected: President, Dr. James T. Walls, Portland; vice-presidents, Drs. Thomas Darling and Malcomb J. Denny, Portland, and J. M. Short, Gresham; secretary, Dr. Aaron Tilzer, Portland, and treasurer, Dr. Arthur J. Vial, Portland.

Onondaga County (N. Y.) Medical Association.—This Association was organized at Syracuse, July 18, by the members of the Third District Branch residing in Onondaga County, and the following were elected to membership: Drs. Franklin J. Kaufman, Thomas B. Dwyer and Merritt B. Fairchild, all of Syracuse. By-laws were adopted and the officers elected to serve until the annual meeting, which will be held the third Monday in February, 1902, are as follows: President, Dr. Henry D. Didama; vice-president, Dr. Adelbert D. Head; secretary, Dr. Bernard S. Moore; treasurer, Dr. Alexander J. Campbell; member of the executive committee, Dr. Amos E. Edwards; fellow, Dr. William J. Ayling; alternate fellow, Dr. Charles B. Gay, all of Syracuse. The next meeting of the Association will be held August 19, the place to be decided by the executive committee.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.]

Treatment of Gastro-Intestinal Disturbance in Infancy.

In the treatment of acute diarrheas of infancy, according to a recent writer as stated in the *Internat. Med. Mag.* the physician who wishes to do his full duty to the patient must stop the milk diet at once; it matters not whether the diet is breast milk or cow's milk, or whether the cow's milk is sterilized or not sterilized; it matters not whether the stools are frequent or infrequent, nor is the character of the stool of any importance. As long as there is evidence of intestinal derangement, the milk diet must be discontinued. It is useless to give laxatives and wash out the few bacteria, and then feed milk to the hosts that remain.

Dr. H. S. Baketel, of Melrose, Mass., in an article in *Can. Jour. of Med. and Surgery*, states that there are three well-defined classes to be observed in the summer diarrhea of children, namely, catarrhal enteritis, entero-colitis and cholera infantum, named in the order of their frequency.

The characteristic feature of the first class is marked looseness of the bowels, accompanied by fever, pain and localized tenderness. The treatment consists in the administration of oleum ricini, to which laudanum is added to prevent griping, and sodium bicarbonate to counteract the acidity. The diet is milk and lime-water. He employs the following mixture in such cases:

R.	**Tinct. opii deod.**	gtt. i	06
	Bismuthi subnit.	gr. v	30
	Mist. cretæ	ʒi	4
	Essentiæ pepsini	gtt. x	66

M. Sig.: One such dose every four hours.

The symptoms of the second class were anorexia, fever, nausea, vomiting with greenish semifluid stools. Along with careful diet he gave the following:

R.	Tinct. opii camph.	ʒiii	12
	Tinct. catechu comp.	ʒiv	16
	Mist. cretæ	ʒi	32

M. Sig.: One teaspoonful every two hours.

In the last class the colon was flushed and irrigation repeated every two hours until the food flakes and mucus had entirely disappeared and clear fluid shown. Food was prohibited, small doses of protonuclein being administered every two hours in brandied water, and the following prescription used:

R.	Acidi sulph. arom.	gtt. xxx	2
	Tinct. opii camph.	m. viii	50
	Spts. chloroformi	gtt. xlviii	3 10
	Syrupi zingiberis, q. s. ad	ʒiii	96

M. Sig.: One teaspoonful every two hours.

Dr. J. D. Windle, in the *Clin. Jour.*, states that thirst is an important factor to be observed in the treatment of summer diarrhea of infants. He explains that the amount of water lost in the stools and by vomiting and perspiration is out of all proportion to that taken in; in many cases none is absorbed, vomiting being constant. The excess, then, must come from the blood. Thirst, therefore, is the cause of restlessness and moaning—symptoms which are very frequently misinterpreted as due to pain. The vital indication in the treatment, then, is to supply water, which relieves the most urgent symptom—thirst—and it is quickly absorbed, rapidly raises blood pressure and gives vigor to the heart. He summarizes by stating that in the severe cases all food should be stopped; give boiled cold water as often and as much as the child will take. The exclusive water diet may be continued with perfect safety for forty-eight hours, but it is rare that the vomiting and diarrhea will not stop within twelve hours. Tepid sponging for the fever, hot dry packs if there is collapse, and linseed poultices to cover the abdomen if there is pain.

In an article in the *Miss. Med. Rec.* the following outline of treatment is given: 1. Adopt the hygienic treatment, which consists in proper care of the bottles if used, boiling them in a soda solution for at least two hours. If breast-fed instruct the mother not to wean the infant in hot months. The nursing should be at regular intervals; give the child all the boiled water it will drink and keep it in the open air as much as possible. 2. The diet should be dropped for twenty-four hours and the bowels thoroughly cleansed out either with mild mercurous chlorid or oleum ricini. Flush out the colon twice a day with tepid water prepared as follows: Water one quart; sodium bicarbonate and sodium chlorid, of each one teaspoonful. This is cooling to the mucous membrane and healing. It neutralizes also any acid secretions present. After twenty-four hours, if the fever has disappeared and the child shows improvement, a teaspoonful of oatmeal boiled in one quart of water for an hour and strained and sweetened with a half teaspoonful of extract of malt may be used. In weak children beef tea and chicken broth may be used after forty-eight hours. When there is considerable pain present, small doses of tincture of hyoscyomus is of great service as follows:

R.	Vini ipecac.		
	Tinct. mucis vom. ãã	m. xx	1 33
	Ext. hydrastis flu.	ʒiss	6
	Tinct. hyoscyami	ʒii	8
	Elix. lactopeptin cum bismutho, q. s. ad.	ʒii	64

M. Sig.: One-half teaspoonful after each feeding.

In cholera infantum the first item in the treatment is to empty the bowel. A hot saline irrigation of the colon immediately and small doses of mild chlorid of mercury every half hour till two or three doses are taken and retained. Follow it in four hours with castor oil in quantity sufficient to sweep out the bowel. If the collapse is great an injection of normal saline solution into the cellular tissue of the buttocks is often of service. In treating cholera infantum always remember that we are treating a poisoning of the system and bend every effort to rid the system of all toxic substances and maintain the strength of the child.

W. C. Hollopeter, of Philadelphia, in an article in the *Internat. Med. Mag.*, states that, in the treatment of the febrile stage of gastro-intestinal disorders in children, the feverish stage can be best managed by hydrotherapy, by intestinal antiseptics and by rest. First empty the stomach if it has not already been accomplished and then give slight enema by the use of glycerin and water, a teaspoonful of the former to a tablespoonful of warm water; after this, a high enema of an alkaline solution. This is to be followed by small and repeated doses of calomel until the characteristic stool is found, succeeded then by a dose of oleum ricini. As an intestinal antiseptic, the following is preferred by Dr. Hollopeter:

℞.	Bismuthi subnit.	gr. ii	12
	Salol	gr. ss	03
	Pulv. arom.	gr. ss	03
	Sacch. lactis	gr. i	06

M. Ft. Chart. No. i. Sig.: To be given dry on the tongue every two hours, or with every movement.

After thorough sterilization of the intestinal tract he observes the feeding, which consists in complete withdrawal of milk and solids and the substitution of albumin water or gum-water. He does not favor the use of meat juice until all fever has disappeared and the temperature has remained normal for at least four days.

Dr. W. Blair Stewart, in the same journal recommends the following prescriptions in obstinate cases of cholera infantum where there is obstinate nausea and vomiting:

℞.	Hydrarg. chloridi mitis	gr. 1/10	006
	Pulv. ipecac. et opii	gr. 1/10	006
	Bismuthi subgallati	gr. i	06

M. Ft. Chart. No. i. Sig.: One every half hour.

If this fails he advises as follows:

℞.	Bismuthi subgal.	gr. xv	1
	Glycerol. acid. carbol.	gtt. xii	75
	Spts. chloroformi	ʒi	4
	Elix. lactopeptin q. s. ad	ʒii	64

M. Sig.: One teaspoonful every half to two hours.

If the case is a mild one, the following is recommended as an antiseptic and anodyne:

℞.	Bismuthi subnit.	gr. i	06
	Zinci sulphocarbol.	gr. ss	03
	Pulv. opii et ipecac.	gr. ¼	015
	Sacch. lactis	gr. i	06

M. Ft. Chart. No. i. Sig.: One such powder every two hours.

Hirst of Philadelphia recommends in the colic of the newborn, careful attention to diet. Pepsin grain, one in a teaspoonful of hot water may be given, with a few drops of brandy added. When diarrhea is present, and the movements are frequent and watery, draining the child's strength, it may be checked with the following:

℞.	Acidi sulph. arom.		
	Tinct. opii camph. ãã	gtt. iv	25

M. Sig.: At one dose, not to be repeated.

In nurslings the following is recommended to check the diarrhea:

℞.	Tannalbin	ʒii	8
	Spts. vini gallici	ʒii	8
	Syrupi	ʒiv	16
	Aq. destil. q. s. ad	ʒii	64

M. Sig.: One teaspoonful four to six times a day.

The following is recommended in diarrhea of older children:

℞.	Bismuthi subnitratis	ʒii	8
	Syrupi fenículi	ʒvi	24
	Aq. destil. q. s. ad	ʒiii	96

M. Sig.: One teaspoonful every one or two hours.

Resorcin is a splendid intestinal antiseptic, and admirable results may be obtained in combination with a bismuth salt:

℞.	Resorcin	gr. xx-xxiv	1	33-1.66
	Bismuthi subnit.	ʒi	4	
	Aq. destil q. s. ad	ʒii	64	

M. Sig.: Shake; one teaspoonful every three hours.

H. C. Hazen, of New York, states that tonics are nearly always indicated, and recommends the syrup of ferric iodid as the best of all forms of iron tonics for children, as it produces fewer unpleasant effects than any other. It should be given in from two to five minim doses to a child of 2 years. The tincture of nux vomica for older children is valuable in these cases of malnutrition with poor appetite and sluggish bowels, being best given after meals in two minim doses to children of three years or older.

Dr. A. D. Blackader, of Montreal, states that all intestinal antiseptics that we are acquainted with, give us but a modicum of assistance in this disorder, and their use is not unassociated with a tendency to depress the heart and circulation, an action which we are especially anxious to avoid. Alcohol, as a heart stimulant, is of much value and is the best in the acute diarrheas of children. Used in moderate quantities it improves digestion, stimulates absorption and is to some extent a food.

Medicolegal.

What a Dying Declaration Is Admissible to Show.—The Court of Criminal Appeals of Texas says, in Medina vs. State, that it understands the rule to be that dying declarations relate only to the res gestæ or essential circumstances of a homicide. That is, the statements must be confined to what actually transpired at the place of the killing—i. e., who were the actors, where it occurred, the position of persons, what was said by the parties, the instrument used, and how the homicide was committed. A dying declaration is admissible to show all the facts immediately connected with the homicide to which a witness, were he present, could testify. This would exclude narratives of past transactions and opinions or mere conclusions of the declarant.

Twenty Thousand Dollars for Injuries to Child.—The second appellate division of the Supreme Court of New York holds, in the case of Laes vs. James Everard's Breweries, that a verdict for $20,000 damages can not be said to be excessive where a child 3 years of age was run over by a team attached to a wagon, and was so injured that he must go through life with one arm, at least, completely paralyzed and gradually shrinking away, while it was by no means certain that he would ever recover the use of his legs to any great extent, and it was reasonable to conclude that his mental faculties were permanently impaired, the evidence of the physicians leading to the conclusion that he was a physical wreck, and that this defect extended to his mental capabilities, likely to result in making him a constant source of expense, with very little hope that he would ever be of use to himself in providing for his necessities.

A Libelous and Not Privileged Communication.—The Supreme Court of Iowa says that the conclusion was fairly warranted, in the case of Hollenbeck vs. Ristine, that the surgeons of a street railway company, incensed at the conduct of a conductor with regard to the settlement of a bill of $15, brought their complaint to the notice of the president of the street railway company, either as a means of inducing the conductor to pay the debt, or for the purpose of causing his discharge, or both; and that the president, preferring to act upon written complaint, asked one of the members of the firm to put it in writing. This the doctor did, stating that for some five years the conductor had owed them a bill for professional services rendered his family in the way of consultation, and, "having no other defense," when finally being sued, "he cowardly slinks behind that of statutory limitation," and that they would prefer not to be connected in an official capacity with a corporation giving employment to men of this character, especially when permitted to occupy positions of trust. And the court thinks it clear that the conductor was discharged because of this communication. Nor does it consider the communication privileged. The result is that it affirms a judgment for $683.33 damages in favor of the conductor and against the writer of the letter.

Police Power to Regulate Practice of Medicine.—The Supreme Court of Michigan holds constitutional, in the case of

People vs. Reetz, Act No. 237 of the Public Acts of Michigan of 1899, entitled "An act to provide for the examination, regulation, licensing and registration of physicians and surgeons, and for the punishment of offenders against this act, and to repeal acts and parts of acts in conflict therewith." It says that the first act passed by the legislature of Michigan to regulate the practice of medicine and surgery was Act No. 167, Public Acts of 1883. This was amended by Act No. 268, Public Acts of 1887. Then followed the act of 1899, covering the entire subject, and providing for a board of examiners. The act of 1899, it goes on to say, is not different in principle from the other acts. If the act of 1883 was valid, then the act of 1899 is valid. And so it holds it. But it was further argued that such legislation is an interference with the inalienable right of a citizen when ill to employ anybody he chooses as his physician. The court's answer is that this contention is not supported by authority or reason. The practice of medicine affects the public health, and it is clearly within the police power of the state to provide that those dealing with disease shall be amply qualified to do so, so far as human experience and education may qualify them. If this contention be adopted, then the law providing for the admission of attorneys to practice law is unconstitutional and void. This legislation has been almost universally sustained by the courts of other states, and the Supreme Court of the United States.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

Boston Medical and Surgical Journal, July 18.

1 *The Alleged Increase of Cancer in Massachusetts. William F. Whitney.
2 *The Clinical Value of Some of the Newer Hypnotics. Albert E. Brownrigg.
3 Case Illustrating Minor Surgery of the Kidney. John B. Blake.
4 *Advantages of Sanatorium Treatment of Pulmonary Tuberculosis. Henri T. Fontaine.
5 Ovarian Cyst with Twisted Pedicle: Acute Symptoms; Operation; Recovery. Charles L. Scudder.

New York Medical Journal, July 20.

6 *Cyst of the Omentum. A. Jacobi.
7 *On the Home Treatment of Pulmonary Tuberculosis. Leonard Weber.
8 *Some Remarks on Tetanus. Fielding Lewis Taylor.
9 *Common Law Rights and the Physician's Prescription. J. Wilkinson Jervey.
10 A Unique Case of Dupuytren's Contraction; Operation by the Open Method. Frank E. Peckham.
11 A Case of Traumatic Rupture of the Intestine. Frederick T. Wright.

Medical Record (N. Y.), June 20.

12 *The Suture of Wounds of Large Blood Vessels, with Report of a Case of Recovery After Suture of a Wound of the Axillary Artery. A. E. Halstead.
13 *Clinical Observations on Syphilis. J. A. Fordyce.
14 Headaches. H. H. Seabrook.
15 The Tampon in Gynecologic Therapy. Maxwell Benjamin.
16 *Latent Pulmonary Tuberculosis. Chas. R. Upson.
17 *Mediate Palpation. E. W. Whitney.

Philadelphia Medical Journal, July 20.

18 Spastic Ileus. (To be continued.) Edward Quintard.
19 *A New Method of Making Tannin Available as an Intestinal Astringent. Albert C. Barnes and H. Hille.
20 Some Observations Respecting the Value of the Present Methods of Medical Education. Augustus P. Clarke.
21 A Few Interesting Obstetrical Experiences. J. Thompson Schell.
22 Photo-Mechanical Reproduction. (Continued.) B. H. Buxton.

Cincinnati Lancet-Clinic, July 20.

23 Christian Science. H. V. Sweringen.
24 Address Delivered at Opening of Training School for Nurses of Speers Memorial Hospital, Dayton, Ky. J. O. Jenkins.
25 One Treatment for Gonorrhea. Clarence Martin.

American Medicine (Philadelphia), July 20.

26 A Review of the Progress of Therapeutics for the Preceding Twelve Months. Reynold W. Wilcox.
27 *Pneumotomy for Abscess of the Lung, with Exhibition of Patient. W. Joseph Hearn.
28 *On the Evils Arising from the Failure to Recognize the True Nature of Neurasthenia, and Some Causes of This Failure. W. W. Johnston.
29 *Anesthetization as a Specialty: Its Treatment and Future. S. Ormond Goldan.
30 The Relation of Pharmacists to Physician and the Relation of Pharmacy to Materia Medica and Drug Therapeutics. F. E. Stewart.
31 Foreign Bodies in the Rectum, with Report of a Case. Lewis H. Adler, Jr.
32 Removal of Ovarian Cyst, Broad Ligament Cyst and Appendix at the Second Month of Pregnancy—Delivery at Term. Maurice Kahn.

Medical News (N. Y.), July 20.

33 *A Study of Sixteen Hundred and Fifty Blood Examinations for the Widal Reaction with Special Reference to So-called Partial Reactions. Robert J. Wilson.
34 *A New Method of Determining Approximately the Amount of Hydrochloric Acid in the Gastric Contents. Max Einhorn.
35 Local Treatment of Female Diseases; Its Abuses. A. L. Beahan.
36 Disinfection Within and Without the Body in Diphtheria. M. A. Veeder.
37 Cerebral Apoplexy: Its Relation to Testamentary Capacity. Charles Schram.
38 Surgical Diagnosis. James J. McKone.
39 *Static Electricity in the Treatment of Sprain. Leonard C. Stanford.

St. Louis Medical Review, July 20.

40 The Epidemic of So-called "Smallpox." J. D. Brummall.
41 Speech: Its Development and Some Impediments. G. A. Roberts.

Virginia Medical Semi-Monthly (Richmond), July 12.

42 New Findings in Ophthalmology. E. H. Hazen.
43 *The Relation of Pelvic Diseases to Insanity. John C. Doolittle.
44 Coccygodynia—Case and Specimen. A. R. Shands.
45 Europhen in the Treatment of Cystitis and Urethritis. C. W. Canan.

Pennsylvania Medical Journal (Pittsburg), June.

46 The Duties of Individual Members to Their County Societies. Joseph M. Corson.
47 The Pupil in Health and Disease. E. D. Payne.
48 The Needs of a Live Medical Society. Francis Schill, Jr.
49 Two Autopsies: 1. Cancer of Peritoneum. 2. Tubercle of Peritoneum. Duration of First Case Nine Months; of the Second Case, Three Months. I. H. Betz.
50 The Pathology of Gastric Ulcers. Jos. B. Johnson.
51 Gonorrheal Pyelitis. Report of a Case. W. L. Atlee.
52 Home Treatment of Phthisis. Guy Hinsdale.
53 Castration by Gangrenous Process Following Injury: Recovery. W. V. Riddle.
54 Some Suggestions for the Treatment of Compound Fractures of the Extremities. L. Le Moyne.
55 Sanitation and Prevention of Tuberculois. W. H. Seibert.

Chicago Medical Recorder, July.

56 Chlorosis, Its Diagnosis and Treatment, and Its Relation to Tuberculosis and to Round Ulcer of the Stomach. Gustav Fütterer.
57 *Hydriatics in the Treatment of Chlorosis. G. W. McCaskey.
58 Chlorosis and Metabolism. Fenton B. Turck.
59 Report of a Case of Removal of the Superior Cervical Sympathetic Ganglion for Glaucoma. H. W. Woodruff.
60 Removal of a Piece of Steel from the Interior of the Eye with the Giant Magnet. William A. Mann.
61 Injury to the Eyeball. Thomas Faith.

Journal of Nervous and Mental Diseases (Nyack, N. Y.), July.

62 President's Address, American Neurological Association. G. L. Walton.
63 A Case of Simple Serous Cyst of the Cerebellum, with Autopsy. George W. Jacoby.
64 Binocular Hemianopsia and Optic Nerve Atrophy in a Case of Diabetes Mellitus. Howard F. Hansell.
65 Report of a Case of Melancholia Followed by Stupor Lasting Three Years and Eight Months; Recovery. Cecil MacCoy.
66 A Case of Peroneal Muscular Atrophy (Type Charcot-Marie). Charles G. Chaddock.

American Journal of Obstetrics (N. Y.), July.

67 *The Corset for Movable Kidney. A. Ernest Gallant.
68 *A New and Better Method of Opening and of Draining the Bladder in Women. Howard A. Kelly.
69 A Method of Operating Upon Intraligamentous and Subperitoneal Fibroids, Based upon the Establishment of Mobility and Symmetry. W. R. Pryor.
70 Recent Developments in Our Knowledge of Cancer of the Uterus. Emil Ries.
71 Pregnancies Following Ventral Fixations, One Ending in Rupture and One in Cesarean Section. Robert L. Dickinson.
72 *The Value of Hegar's Sign in Differentiating Pregnancy from Uterine Myoma. Robert G. LeConte.
73 Case of Gelatinous Disease of the Peritoneum, or Pseudomyxomatous Peritonitis. A. Lapthorn Smith.

74 A Congenital Longitudinal Septum of the Vagina Forming a Double Vaginal Orifice. Jacob Frank.
75 Occipito-posterior Positions of the Vertex. William Gillespie.
76 Stypticin in Uterine Hemorrhage. H. J. Boldt.

St. Paul Medical Journal, July.

77 Injuries to the Spine from an Orthopedic Standpoint. Arthur J. Gillette.
78 Observations in China and the Tropics on the Army Ration and the Post Exchange or Canteen. Louis L. Seaman.
79 Asphyxia Neonatorum. E. W. Benham.
80 Smallpox, Vaccination and Aseptic Glycerinated Vaccin. James W. Robertson.
81 Some Thoughts on the Ethics of Medical Journalism. Burnside Foster.
82 Eclampsia Infantum, with Reference to Etiology and Diagnosis, with Report of a Case. C. L. Brimi.
83 Miliary Tuberculosis; Cerebral Hemorrhage. Mabel F. Austin.

Brooklyn Medical Journal, July.

84 *The Application of Water in Chronic Diseases. Simon Baruch.
85 Tuberculosis of the Testicle, Seminal Vesicles and Prostate. Henry H. Morton.

Kingston Medical Quarterly, July.

86 The Eye in General Diseases. John R. Shannon.
87 Ectopic Gestation. R. W. Garrett.
88 Effects of Polluted Water on Fish Life. A. P. Knight.

Medical Review of Reviews (N. Y.), June 25.

89 Ethyl Alcohol. (Concluded.) Winfield S. Hall.

Cleveland Journal of Medicine, July.

90 *Epigastric Pain. Henry Wald Bettmann.
91 *Affections of the Cranial Nerves Following Influenza. Charles J. Aldrich.
92 *Abnormal Conditions of the Foot as Cause of Knee Symptoms. Albert H. Freiberg.
93 Influence of the Physician in Public Affairs. Edmund C. Brush.
94 Report of a Case of Gall-Stones with Exhibition of Specimens. A. F. House.

Hot Springs Medical Journal, April.

95 *Further Observations on the Clinical Application of the Suprarenal Capsule. W. H. Bates.
96 A Funeral Delayed in the Philippines. J. C. Minor.

Medical Sentinel (Portland, Ore.), July.

97 Eye-Strain—Its Origin and Treatment. Carl Schulin.
98 A Rare Case of Sudden Death. Thomas W. Musgrove.
99 The Legal Duties of Physicians and Surgeons. W. W. Cotton.

Annals of Ophthalmology (St. Louis), April.

100 Exophthalmos, the Result of an Osteoporosis. P. N. K. Schwenk.
101 Myosis and Ptosis from Paralysis of the Cervical Sympathetic by Gunshot Wound. George C. Harlan.
102 New Test-Types for Determining the Acuteness of Vision. Edmund Landolt.
103 Evisceration Without Necessity of Wearing Artificial Eyes. J. G. Huizinga.
104 A Series of Demonstration Lenses Intended for Teaching Purposes. Charles A. Oliver.
105 *The Economic Valuation of Vision. H. V. Würdemann and H. Magnus.

Medical Bulletin (Philadelphia), July.

106 Seborrhea—Acne Rosacea. J. V. Shoemaker.
107 Further Experience with Tannigen. George A. Hewitt.
108 The Expression of the Eye. Giuseppe Albertotti.

The Post-Graduate (N. Y.), July.

109 Some Remarks on Chronic Post-Nasal Discharge. Thomas J. Harris.
110 Ectopic Pregnancy and Its Early Symptoms. Neil MacPhatter.
111 Report of Proceedings of Section on Ophthalmology at American Medical Association. A. Edward Davis.
112 Report of Clinic. Wendell C. Phillips.
113 Report of Clinic. Dr. Chapin.

Denver Medical Times, July.

114 The Late Epidemic of Typhoid Fever in Fort Collins, Colo. P. J. McHugh.
115 *Persistent or Cyclic Albuminuria Without Clinical Symptoms. G. E. Tyler.
116 The Administration of Anesthetics in Renal Diseases. Wm. Dow.

St. Louis Medical and Surgical Journal, July.

117 Synopsis of Dr. J. Ashburton Thompson's Report of Plague in New South Wales. Albert S. Ashmead.
118 A Case of Myxedema. Cheves Bevill.
119 The Treatment of Nasal Catarrh by the General Practitioner. Eugene C. Underwood.
120 The Treatment of Diphtheria Other Than with Antitoxin. J. P. Crozer Griffith.
121 What Is Bovinine, Its Composition, and Method of Preparation?—An Independent Investigator's Discoveries. C. W. Canan.
122 General Considerations of Treatment of Placenta Previa. Charles P. Noble.

Woman's Medical Journal (Toledo), May.

123 Hydatid Mole, with Report of a Case of Mola Hydatidosa Totalis. Elizabeth F. Kearney.
124 Association in Women of Pelvic and Hepatic Disease. Inez C. Philbrick.

Maryland Medical Journal (Baltimore), July.

125 *Osteitis Deformans. A. D. Atkinson.
126 Spontaneous Version of a Fetus with Hydroperitoneum Requiring an Operation Before Delivery Was Possible. L. George Taylor.

New York State Journal of Medicine (N. Y.), July.

127 *Acute Tuberculosis of the Mesenteric Lymph Glands. Maurice H. Richardson.
128 The Resources of Modern Minor Gynecology. Augustin H. Goelet.
129 General Septic Peritonitis. Irving S. Haynes.

New Orleans Medical and Surgical Journal, July.

130 Superstitions, Fads, Fetiches and Facts: A Retrospect and Forecast: the Lines on Which the Progress of the Future Must Be Worked Out. F. W. Parham.
131 The Blood in Syphilis, Before, During and After Treatment. L. H. Warner.
132 Observations on Scarlet Fever. Whyte G. Owen.
133 Acute Vitreous Phosphorus Poisoning with Suicidal Intent, Followed by Death in 144 Hours. L. J. Y. Genella.

Southern California Practitioner (Los Angeles), June.

134 Treatment of Hypertrophy of the Prostate Gland, by Ligature of Spermatic Cord. J. Ewing Mears.
135 Spinal Cocainization. C. Van Zaelenberg.
136 *Spinal Anesthesia. Louise H. Clarke.
137 *A Practical Method for Demonstrating Tubercle Bacilli When Associated with Influenza Bacilli. A. J. Comstock.
138 A Short Clinic on the Skin—Treatment of Eczema—A Difficult Case of Catheterization—The Use of the Sun's Rays in Diseases of the Skin. George E. Abbott.

Atlanta Journal-Record of Medicine, July.

139 Gonorrhea as a Social Problem. Drs. Childs and Champion.
140 Tincture of Yellow Jessamine in the Treatment of Spasms, Fevers, Nervous Affections, etc. N. F. Howard.
141 Some Remarks on the Treatment of Dysenteric Diarrhea. George Torian.
142 Albuminuria Without Manifest Organic Renal Lesions. W. A. Deas.

Medical Herald (St. Joseph, Mo.), July.

143 Puerperal Sepsis. Charles C. Allison.
144 *The Pathological Importance of Diseases of the Accessory Sinuses of the Nose. D. C. Bryant.
145 *Facial Paralysis. J. M. Aikin.
146 *A Plastic Operation for Pruritus Ani. H. P. Hamilton.
147 Compensation and Failure of Compensation in Heart Disease. Millard Langfeld.

Medical Times (N. Y.), June.

148 The Bearing of Alimentation on the Excretion of Acetone. F. Schuman-Leclercq.
149 Progress in Treatment of Typhoid Fever. H. P. Cook.
150 Ulcerations of the Rectum. Samuel G. Gant.
151 Congenital Dislocation of the Hip. A. M. Phelps.

July.

152 Practical Remarks on the Treatment of Specific Urethritis. L. J. Davis.
153 Acne Vulgaris. Ellice M. Alger.
154 Blindness from Habit, Amblyopia, Strabismus. Norbourne B. Jenkins.
155 Satyriasis: A Study in Medical Jurisprudence. N. E. Aronstam and L. J. Rosenberg.
156 Two Cases of Supposed Carcinoma of the Tonsils. William Cheatham.

New England Medical Journal (Danbury, Conn.), July.

157 *The Limitations of Surgery in the Treatment of Nervous and Mental Diseases. William B. Pritchard.
158 Gonococcal Auto-Reinfections of the Urethra. Ferd C. Valentine.
159 On the Diagnostic Test and Constitutional Treatment in Joint Injuries. Thomas H. Manley.
160 *Nutrition and Stimulation. I. N. Love.
161 An Ointment for Diseased Mucous Surfaces. A. S. MacDonell.

Carolina Medical Journal (Charlotte), June.

162 The Importance of an Early, Definite Diagnosis of Appendicitis. J. Ernest Stokes.

163 The Need for Greater Care in Making Examinations and in Sending Patients to the State Hospitals. Isaac M. Taylor.
164 Etiology and Treatment of Menorrhagia and Metrorrhagia. W. W. McKenzie.

AMERICAN.

1. **Cancer in Massachusetts.**—The Shattuck lecture by Wm. F. Whitney is an elaborate discussion of the studies of cancer with special relation to its increase in the state of Massachusetts and the author recapitulates the substance as follows: 1. If death from cancer should go on at the apparent geometrical rate of increase of the past fifty years, in two and a quarter centuries every person over 30 years would die from that disease. 2. This rate is probably only arithmetical at its worst. 3. The increase is probably due to better diagnosis and registration, and until the ratio of deaths over 30 years has reached 8 to 9 per cent., which is shown by autopsies to be the true rate for cancer, it is not justifiable to speak of the increase as inherent in the disease itself. 4. For purposes of comparison with other places or years, a "graphic picture," composed of both the rate and ratio curves, covering the period over 30 years, divided into decades, is the best. 5. Comparison with other states and countries shows the rate for Massachusetts to be about the same as theirs, with greater variation between the males and females than is the case in Austria, which is remarkable for the correspondence between the two sexes. 6. In the distribution in the New England States, there is no geographical feature that explains the slight variation, which is easily within the limits of better registration. 7. In the state itself there is a slight increase westward for groups of counties of the same density of population. The densest populated part of the state, apart from these, shows a little higher rate.

2. **Some Newer Hypnotics.**—The newer hypnotics here discussed are dormiol, which is a chemical compound of equal molecules of chloral and amylene hydrate; chloretone, and hedonal, a derivative of urethane. The author speaks highly of dormiol as a hypnotic producing quiet sleep for four or five hours. If the patients are awakened within that period they frequently show drowsiness, but after a satisfactory sleep no uncomfortable after-effects are observed so far as his experience goes. In some cases it seems that the dose had to be repeated, and he thinks it better to give a large single dose than several smaller ones. [The opinion given by the author in this regard would seem to indicate a little caution on the part of those using the drug, as idiosyncrasies might develop and as experience with it has not been as great as with some of the other hypnotics.] It is rapid in action, sleep generally occurring within one-half hour. In rare instances no effects whatever were obtained from its administration. He has used chloretone in 71 instances in which he studied its effect, and he thinks a larger dose is needed than is yet generally recommended. The duration of sleep seems to be longer and some patients complain of disagreeable subjective after-sensations. Its anesthetic and analgesic effects are peculiar to it, not being possessed by the other two hypnotics here studied. Hedonal is chemically methyl-propyl-carbinol-urethane, disagreeable to the taste, and is evidently a less effective hypnotic than the other two, though it does not appear to produce any depression or uncomfortable effects in the 35 cases tried. It is inapplicable, however, to other than the milder cases of insomnia.

4. **The Sanatorium Treatment of Tuberculosis.**—The advantages of the sanatorium treatment in pulmonary tuberculosis, as stated by Fontaine, are: The constant supervision by physician or trained attendant, regulated exercise, rest, etc.; the securing of fresh air; super-alimentation; rest cure; sanitary precautions and mental atmosphere. The patients who go there make it a business to get well and they help each other.

6.—See Abstract in THE JOURNAL, XXXVI, p. 1340.

7. **Tuberculosis.**—The home treatment of pulmonary phthisis forms the subject of Weber's article. In a case of fresh febrile tuberculous infection the following are the indications for treatment: 1. Put the patient to bed and keep him there until the thermometer shows practically normal temperature. Rest cure at the outset and repeated at intervals is needed, together with careful nursing of the patient, for success. 2. A well-ventilated and lighted room some distance above ground, arranged like an ordinary hospital private room, heated by an open fire place or grate-stove, with proper arrangements for the collection of sputa, etc. 3. Food, selected according to the cases, given every two or three hours in small quantities or in the shape of meals four times a day, as soon as the patient can take and digest them. That fat-producing materials should be largely taken is self-evident. In the acute febrile stage the patient is sponged with alcohol and water three times daily and when he has improved and become convalescent he is advised to take cold sponge baths every morning and later, with improvement, the douche or rain bath, beginning warm, and cooled. Short procedures and low temperature of the water are the essentials for successful hydrotherapy in these cases. 4. For keeping down the temperature in the early stages and at all times he prefers a combination of acetanilid, phenacetin, and antipyrin, 1 grain of the former to 3 each of the latter to be given when the temperature goes above 101 F. 5. For hemoptysis he advises placing the patient in bed with head elevated, ice on the chest, and to give a tablespoonful of table salt two or three times the first day and milk and water only for nourishment; control the cough with codein. From the second day on he gives fluid extract of arbor vitæ, 1 dram in a glass of water three times in twenty four hours, which remedy he learned to use from the late Dr. Loomis. 6. For the cough and irritability he uses a formula of chloroform water, 6 ounces; sodium bicarbonate, 1 dram; morphin sulphate, 1 grain, and cherry-laurel water, 1 dram. From 1 to 2 drams in an ounce of water every three hours. 7. After the acute symptoms have subsided creosote is prescribed. 8. In case of weak heart and poorly developed muscles, tonics such as strychnin, with or without digitalis, and with or without quinin in small doses should be given. 9. When the stage has been reached that the patient can be sent away from the city, he is advised to go to the uplands in the country, securing a light, airy house, avoiding wind and dust as much as possible. He does not think it advisable, however, to have a patient in delicate health sent a long distance away from home and be without a physician. 10. Popular education on the subject of tuberculosis is an essential measure and he thinks that it should be brought before the public in such a way that they can seek to have intelligent treatment in time. He can count 110 private patients treated as above described, about 50 of whom have been restored to health, 20 greatly improved, and only about 30 have died of consumption. He gives brief abstracts of a few of the cases.

8. **Tetanus.**—After reporting several cases, Taylor remarks generally upon the disease and its treatment. He thinks that the prophylactic use of tetanus antitoxin admits of little question, but after the disease has fairly begun the prognosis can not be said to be satisfactory, although it seems to have improved according to the statistics of Lambert since the use of antitoxin. In conclusion he mentions the Bacelli method with carbolic acid which is claimed to give remarkably good results in the hands of its originator and fairly good results under Tizzoni and Behring.

9. **The Physician's Prescription.**—The following is a summary of the common sense and legal status of the physician's prescription, so far as it has been defined, according to Jervey: 1. The patient has no legal nor other right to demand a written prescription or written directions from the physician. 2. It is right and wise that the druggist demand and procure from the physician his written orders for the compounding of prescriptions. 3. The physician has the undoubted right to designate what pharmacist shall fill his prescription. 4. The written prescription is simply an order from physician to pharmacist. It is, through courtesy, and by virtue of custom and convenience, handed to the patient for transmission; but the latter has not, at any time, the slightest right of possession in the instrument. 5. The druggist has at least the right of permanent guardianship (perhaps of outright possession) of the prescription, and he must keep it on file for reference and

for any form of proper investigation. 6. There can be no right, extenuation, or excuse for a copy of a prescription, with physician's name attached, to be taken by druggist, patient, or any one else, without the authority of the physician. 7. The careful physician should invariably retain a carbon-paper facsimile copy of every prescription he writes. 8. The druggist has a legal right to utilize any formula that is uncopyrighted that may fall into his hands, but he can not, unauthorized, use the name of its author in connection with it. In most states, however, statutes would bar his selling intoxicants or other poisons except by direct order of physicians. 9. If a druggist refills a prescription without the order of the physician who wrote it, he does so on his own responsibility, and he has no legal or moral right to leave or place the physician's name on the container.

12. **Suture of Wounds of Large Blood Vessels.**—Halstead reports a case of successful suture of the axillary artery, and reviews the literature of the subject, showing that with the exception of isolated cases in the past, as far back as 1762, little has been done until comparatively late years in this particular line. He mentions the technique and reports some experiments that he has made on dogs. He thinks in cases of longitudinal wounds of arteries it is best to use the continued catgut suture penetrating only two outer coats. After closure of the wound, an additional suture of the perivascular connective tissue may add strength to the union. In complete wounds or where more than one-half of the circumference has been divided, the best method is by invagination as practiced by Murphy, the proximal end being invaginated into the distal by two or three silk sutures, which are first fastened to the proximal end and are then passed through the walls of the distal end from within outward. Tying these sutures draws the proximal end into the distal. After this four or five interrupted sutures continuing only as far as the intima of the invaginated vessel are used to bind the two together. Septic wound conditions contraindicate the operation. For controlling the hemorrhage, temporary elastic constriction is best where it is possible; in other cases digital compression or hemostatic forceps with light flexible blades covered with rubber drainage tube have been used, though there is a possibility of injuring the vessel by them. Temporary ligation is dangerous. In the treatment of wounds of the arteries where there has been a loss of substance, it has been suggested by Payr that the opening be closed by a magnesium plate fastened between the adventitia and media. Gluck, in a wound of the common carotid of this kind where end-to-end union could not be obtained, closed the defect in the artery by suturing over it a flap taken from the internal jugular vein. In suture of any large blood vessels, the operation wound should be closed by buried sutures of catgut without drainage. The accurate coaptation of the wound will help the strength of the vascular suture.

13. **Syphilis.**—Fordyce remarks on cases of gangrene of the initial lesion, which he has observed, also other complications, and on the diagnosis between the specific eruption and those of other diseases, such as lichen planus, pemphigus, psoriasis, lepra, seborrhoic dermatitis, etc.

16. **Latent Pulmonary Tuberculosis.**—Upson calls attention to a summary of 197 cases of pulmonary tuberculosis which called for the treatment of other conditions, such as naso-pharyngeal catarrh, hypertrophic rhinitis, tonsillar hypertrophy, etc., the lung disorder not being suspected. In these cases 115 were females and 82 males. The family and personal histories were good in the majority. The home environment was satisfactory in 99. The greater number of the patients were factory operatives. In 125 cases the eye conditions were more or less noticeable, showing exaggerated brilliancy or dilated pupils. In 20 cases the pupils were unequally dilated. The physical signs were more or less prominent in the majority and in 118 cases there was a slight rise in temperature. All the symptoms are reviewed in detail and the author calls attention to the importance of noticing carefully such cases where there are symptoms of general malaise, loss of strength, appetite, weight, etc., to examine for the existence of pulmonary tubercular complications.

17. **Mediate Palpation.**—Whitney has used the phonendoscope to measure the vibratory thrills brought to our cognizance through the tactile sense. This method of examination, for which he suggests the name mediate palpation, gave such brilliant results in his hands that he thinks it is well to call the attention of the profession to the procedure. The method of use is as follows: The phonendoscope is placed upon the chest, as is usual for auscultation, and then after the rubber tubes are removed the palmar surface of the hand is laid upon it and receives the vibrations which have been reduplicated by passing through the instrument. Its action is akin to that of a sounding-board, delivering the result, however, to the sense of touch instead of to the auditory apparatus. One instrument can be shifted from one side to the other, or two can be used, one for each palm. Any good conductor of vibration may be used, but the phonendoscope does excellently, and if one has it, he need look no further at present, as it fulfills in this way a double office—namely, that of auscultation and mediate palpation.

19. **Tannin.**—Barnes and Hille have produced a tannin nucleo-proteid which gives off its tannin gradually, and is, therefore, of special advantage as an intestinal astringent. Only a small quantity comes in contact with any one portion of the intestinal mucous membrane, thus avoiding local irritation that might defeat the object of treatment. They experimented on calves suffering from diarrhea and found this to be very useful, and clinical trials now being conducted indicate that it is equally effective in the human being.

27.—See abstract in THE JOURNAL, xxxvi, p. 1583.

28. **Neurasthenia.**—Johnston utilizes the history of Charles Darwin as an illustration of the results of neglect of early neurasthenia and his great success in literature and science is, he thinks, largely attributable to the course followed in later life, probably under the direction of Sir Andrew Clark. He calls attention to the failure to apply for early treatment in these cases and the lack of appreciation of disease symptoms by young medical men.

29. **Anesthetization as a Specialty.**—Goldan pleads for a better recognition of importance of the function of the anesthetist and his better remuneration. He should not be considered as a mere satellite of the surgeon, but should be recognized as a factor of distinct importance in the operation, and a class of skilled anesthetists should be demanded and supplied.

33. **The Widal Reaction.**—Wilson studied this in over 1600 blood examinations; "33 per cent. of the positive reactions occurred in the first week, 84 per cent. before the end of the second week, 16 per cent. in the third week, and 4 per cent. in the fourth week." So large a percentage occurring so early in the disease as the second week indicates that the blood examination is of material value to the physician. Of all the typhoid bloods where no reaction was obtained, all but 27 per cent. were seen before the tenth day of the disease. If second samples had been seen, he thinks the reaction probably would have been found. Lastly, only 7 per cent. of partial reactions are found in the typhoid infection of hospital cases, through partial reactions occur more frequently in tuberculosis and malaria than in typhoid. Thirteen different conditions were represented. The value of the partial reaction is nil, in his opinion, except as a suggestion of a second examination. He sums up the results of his study as follows: 1. That these cases where the Widal reaction has been present are only further evidence of its well-known practical value. 2. That the so-called partial reactions are valueless.

34. **Hydrochloric Acid Determination.**—A new method, here described by Einhorn, which he believes in exactness to be equal to that of Günzburg, is as follows: A minute quantity of stomach contents is placed by means of a glass rod upon a strip of dimethyl-amido-azo-benzol paper (one-half by eight centimeters). If the paper turns red one drop of the contents is diluted with two drops of water in a small porcelain dish. A glass rod is dipped into the mixture and the test paper again touched. If it still turns red, one or two more drops of water are

added and the procedure repeated as before. This is done until only a slightly red or almost no red color is produced by the mixture upon the test paper. In this way the amount of dilution required for a trace reaction with the test paper is determined. It is clear that the more HCl there is in the stomach-contents the more they can be diluted, still giving a trace reaction with the dimethyl-amido-azo-benzol paper. He considers this method of examination valuable: 1, in examination with the stomach-bucket or where from other causes only small quantities of gastric contents are at our disposition, and 2, in cases in which it is of importance to obtain at once an idea regarding the amount of acid, and the necessary solutions for titration are not at hand.

39. **Sprains.**—Stanford recommends the use of static electricity in the treatment of sprains, reporting briefly a number of cases. He thinks that for sprains with little or no effusion, such as ankle sprain, the spark affords a very satisfactory method of treatment, giving immediate relief, which lasts for from two to four hours, after which some reaction follows, depending upon the work put on the limb. Aside from immediate relief, there is marked permanent improvement in the majority of cases. In ordinary cases of sprained ankle, daily applications of the spark made for 5 to 7 days removed all lameness. Where effusion is present to any extent, as in synovitis of the knee, the spark, while it affords relief for a short time, seems to have little other effect. When, however, the effusion has been removed by other methods it is a valuable aid, stimulating and strengthening the weakened structures. In cases of long standing, the results are not quite so satisfactory as in acute sprains, but still they may be of use to a certain extent. Care should be used in the administration, as in one or two cases an unpleasant reaction followed.

43. **Pelvic Diseases and Insanity.**—Doolittle has examined 276 patients admitted within twenty-two months to the Iowa Hospital at Independence and reports the findings. In quite a large proportion there were remediable lesions and there was a positive heredity in 47 per cent. of the cases. In only a very small percentage could it be excluded, but a reliable history could not be obtained in the rest of the cases. The results of operative treatment are reported and the author concludes as follows: 1. Pelvic disease is often associated with mental disease, and may be a factor in its etiology, but is seldom, if ever, the sole cause of insanity. 2. Pelvic disease and menstrual disorders are not associated with any particular characteristic psychosis. 3. There is no apparent relation between the intensity of the mental disturbance and the severity and extent of the pelvic disease. 4. Pelvic diseases in insane women should receive the same treatment when practicable as in the sane, and for the same reasons. 5. Surgical operations on those of unstable and defective mental organization, and on those hereditarily predisposed, will usually result unfavorably and leave the patient in a worse mental condition than before the operation, and this is particularly true when there is no local pelvic disease. 6. The best results from surgical operations may be expected in the hysterical and those especially disturbed at the catamenia.

57. **Chlorosis.**—McCaskey recommends the use of hydrotherapy, especially the douche, but it is essential that the application of cold be preceded by the storage of heat, whereby the tonic effects of cold are obtained without undesirable depression or lowering of the tone. In average cases he has satisfied himself that the hot *douche mobile* of the French, followed by cold similarly applied, and gradual force of impact adapted to the physiologic state of the patient, improves cardiovascular tonicity, stimulates general innervation of all the organs and hastens the restoration of blood, to the normal state.

67. **Movable Kidney.**—Every physician should be acquainted, Gallant says, with the special symptoms of movable kidney. For routine work the hand is placed just below the hypochondium and the kidney is displaced by deep inspiration, held and palpated, and allowed to escape during expiration. In some cases the dorsal or upright inclined posture will be more satisfactory for bimanual examination. While a certain number are subjects for operation, 90 to 95 per cent. can be cured symptomatically by the corset and for this purpose one must be secured as long in front as can be worn to elevate and support the redundant abdominal walls and form at the waist line a shelf upon which the kidney may rest. The so-called straight front corset has given good results. It must not be less than two inches smaller than formerly worn, laced at the back from top to bottom with two flap laces as an open V to prevent cutting and chafing and must be laced very snugly from the lowest point to the waist line, loosely from the waist upward, while the patient is standing. Having thrown the corset around the waist she should lie down on the bed, draw up her knees, place her head upon a pillow to relax the abdomen and permit the viscera to gravitate upward toward the diaphragm, and while in this position fasten the corset. Before hooking, she must push the kidney into its nest under the edge of the ribs. This is a simple matter after it has once been learned. The last hook must be fastened first and so on from below upward. As each succeeding hook is secured, the redundant abdominal wall must be drawn within the corset. Any woman with nephroptosis must not be permitted to maintain the upright position without her corset. A corset applied in this way will retain a replaced kidney in a position from which it can not be dislodged downward, thus relieving the symptoms by supporting and elevating the lower abdominal wall; it will tend to prevent or overcome the effects of visceral ptosis; it will, with the kidney at rest, determine whether the symptoms are due to mobility of that organ or disease in adjacent structures and as the patient's condition improves and she puts on flesh, the kidney will descend less and less, and in some cases, freedom from symptoms has resulted; risks of operation, scars, after-pains, and failures are avoided. Operation is always available as a last resort if everything fails.

68. **Opening the Bladder.**—Kelly describes a new method of opening the bladder, which consists in putting the patient in the knee-chest position, elevating the posterior vaginal wall and introducing the catheter, allowing air to enter the bladder. A knife fixed at nearly a right angle to the handle is then passed through the vesico-vaginal septum, opening up the bladder into the vagina about 1.5 centimeters to the front of the cervix. The incision can be made any desired length. By putting the finger into the incision, the internal orifice of the urethra is located, guiding the knife as far forward as desirable. This can be done under cocain anesthesia, and in case of irritable urethra or other reasons for desirable drainage for a short period he introduces a mushroom catheter, leaving it in for a week or ten days. As soon as it is withdrawn, the wound heals spontaneously. The method is of great advantage to operations about the urethra and is the best for opening the bladder for removal of the vesical calculus. As soon as the stone is removed, the incision may be closed with the utmost ease and accuracy; with the patient in the same position.

72. **Hegar's Sign.**—LeConte has found Hegar's sign apparently reliable in differentiating myomata from pregnancy. In three cases the womb resembled pregnancy in appearance, except that compressibility of the lower uterine segment was absent. The absence of this sign permitted him to proceed with the operation with the utmost confidence. If the sign has value, it is of the highest importance; if it has not, his good fortune, he says, has been superior to his knowledge.

84. **Hydrotherapy.**—The stimulating effect of water is elaborated upon by Baruch, whose confidence in this agent has been gained after years of study and observation. The first diseases in which he mentions its use especially are phthisis and neurasthenia. In the former the use of douches and systematic hydrotherapic treatment often seem to be very effective. In neurasthenia he believes that the methodical employment of hydrotherapy in combination with proper diet and environment will work wonders in many cases. The most useful procedures are the dry pack, which consists in the snug wrapping of the patient in heavy woolen blankets for about an hour, followed by uncovering of successive parts of the trunk, then treated to a rapid and brisk rubbing with a bath glove or washrag squeezed out of water at 85 F. After drying and friction the

patient is sent into the air for general exercise. The process is repeated daily, the water temperature being reduced 2 or more degrees each day until 60 F. is reached. When the patient bears this well, he is subjected to more decided measures. Standing in water at 100 F., in a warm bathroom, the patient may be subjected to affusions from a foot-tub containing water at a temperature of 80 F., daily reducing it 2 or 3 degrees until the temperature of 60 F. is reached. Water is dipped and thrown with force on the back and shoulders with a long handled basin or large tin dipper. If this is done forcibly, followed by rapid drying and dressing and exercise, the patient will not be chilled. Every day larger quantities of water may be used, always avoiding chattering of the teeth and cyanosis. He thinks this method can be applied at home and that the stimulant arouses the depreciated neurons, increases the vascular activity of the brain and improves general and local nutrition. Those cases of neurasthenia in which insomnia is prominent are specially amenable to hydrotherapy judiciously added to treatment of the general condition. Diabetes is another disease in which he finds hydrotherapy of decided benefit. He has frequently observed that strict dietetic rules may be relaxed if systematic exercise is added to the treatment of diabetes. Nervous dyspepsia, hysteria, obstinate neuralgia, sciatica, neuritis, lumbago and allied diseases are relieved by cold applications. Spasmodic and bronchial asthma which has resisted other treatment is remarkably relieved under hydrotherapy and we are aware of what has been done in the Nauheim method of treatment of cardiac disease. In angina pectoris, which is more often of the false than the true type, hydrotherapy has often relieved after failure of other methods employed by his colleagues and himself. In gouty rheumatism and lithæmic disease remarkable cures are effected by the judicious application of baths and douches under the direction of a skillful physician in watering places. Their treatment may be imitated at home, wherever douches under pressure of twenty to thirty pounds can be had. This treatment stimulates the emunctories, especially when combined with abundant and the methodical drinking of water. He has observed great relief in this type of patients and often complete restoration obtained under hot bath and douche and massage treatment at home. His deductions are from an experience of more than 100,000 recorded procedures in neurasthenia, hysteria, some of the psychoses, phthisis, gout, rheumatism, dyspepsia, cardiac diseases, sciatica and other neuralgias, obesity and neuritis. He cautions, however, against the empirical application of treatment or its use in unskilled hands. If water is to be a valuable remedy it must be only in the hands of the medical man; its theory and practice must be taught in our schools and its application in our hospitals.

90. **Epigastric Pain.**—The points to which special attention is called by Bettman are the part played by gall-stones in producing local pain, and he says it should be laid down as a clinical rule that cholelithiasis should be suspected whenever patients complain of special epigastric pain occurring several hours after eating and when a careful examination of the secretion or digestive function reveals no abnormality. He reports several cases which seem to him proof that the demonstrable absence of gastric lesions of tabes, severe paroxysmal gastric pain in the vast majority of cases indicates gall-stones. The relation of epigastric pain to spinal trouble is also mentioned, and he says that in a certain number of patients pressure against the anterior surface of the spine about an inch below the umbilicus produces a severe pain located in the epigastrium and radiating to the hypochondrium. Persistent epigastric pain may be produced by pelvic lesions and much more rarely by eye-strain. A very interesting form occurs in young chlorotic girls, who complain of symptoms suggesting gastric ulcer. The special features are the chlorotic background, absence of nausea or vomiting, localization in the median line, normal or diminished gastric acidity and tender spots, and most of all, the rapid disappearance of symptoms under treatment with iron and arsenic. Another form worth mentioning is that accompanying arteriosclerosis in elderly persons, coming on usually after meals when exercise is indulged in. It is not accompanied by local tenderness, heart disease or dyspnœa, and the digestion is little if at all impaired. It does not affect the general health, but is simply an annoying symptom. Van Valzah and Nisbet ascribe it to the gastric localization of the arteriosclerosis and liken it to the ordinary muscle cramps of this condition. In conclusion, he says that we can not be too careful in estimating the significance of epigastric pain. In some cases it is associated with angina pectoris, and it may be the herald of severe or even fatal cardiac disease. Occasionally we locate in the stomach pains situated in the left lobe of the liver; we should be careful to study each case and determine its causation.

91. **Post-Influenzal Neuralgia.**—Aldrich quotes Clouston, Mills and Knapp as to the deleterious general effects of an epidemic of influenza, but especially considers the severe infectious manifestations that follow it, particularly neuralgia of the cranial nerves. He thinks that seven-tenths of the cases in the last ten or twelve years date the beginning of their trouble to an influenzal attack. The frequency of zoster both of the trunk and trigeminal region, occurring in la grippe, is also evidence of the vascular origin of many of the cranial and spinal affections following the disease. The treatment which he has found to cure many initial cases of trigeminal post-influenzal neuralgia is a combination of the castor oil and strychnia treatments. After thorough examination, if the case is found suitable, the patient receives an initial dose of castor oil, which is 1 ounce if opiates are not being taken and 2 if they are. A solution of nitrate of strychnia, 1 minim representing 1/200 of a grain, is given in doses of 20 minims four times a day, increasing 1 drop every twenty-four hours and is pushed until systemic effects are obtained, the oil being given daily. The patient should be unaware of the nature of the treatment. If the patient has been taking morphin, it should be tapered off. He finds this method specially calculated to cure post-influenzal neuralgia of the spinal or cranial nerves.

92. **Knee Symptoms from Foot Disorders.**—The summary of Freiberg's paper is: 1, that abnormal conditions of the foot may be the cause of pain in the knee with or without themselves showing any local subjective symptoms; 2, pronated and flat-foot being the most frequent cause of this character, it is possible for shortening of the calf-muscles to be the underlying cause of such knee pain in cases of contracted or pronated foot, and 3, the attachment of the calf-muscles to the knee capsule through the medium of the plantaris may serve to explain this phenomenon. He mentions in conclusion an article by Pal describing cases where he has been able to determine flat-foot as the cause of the symptom known as meralgia paresthetica.

95.—See abstract in THE JOURNAL, XXXV, p. 1050.

105. **The Economic Valuation of Vision.**—The authors show that a correct estimation of the effect of injuries to the visual apparatus upon the earning powers may be obtained by a simple mathematical calculation. The complete earning ability depends upon three factors: 1. The unimpaired functional power of the bodily organs. 2. The technical knowledge necessary for the carrying on of the vocation. 3. The ability to compete in the labor market. Normal physiologic vision consists of a series of different factors, i. e., the central acuity, visual field, light and color sense, adaptive faculty, muscular movements and cerebral processes all acting together to produce sight. Each of these numerals is given its specific and relative value in the equation, the whole sum equaling normal physiologic vision. Although the formula given is a rather heavy mathematical one, its handling is extremely easy, for we simply replace its several factors by the value of the function. Thus, if all be uninjured, the earning ability = 1, the valuations are very easily determined by looking at the tables which have been compiled by Würdemann and Magnus, or by estimation by a diagram; thus the calculation involves but a simple example in multiplication and takes but a few minutes' time. There is a considerable difference between the scientific definition of blindness and that of economic blindness. The highest and lowest points of scientific visual acuity do not correspond to those used in business; i. e., a day laborer may have his visual acuity reduced to as low as 50 per cent. of normal, yet be able

to continue his work just as well as before, but if it were reduced below 5 per cent. of normal, he would be unable to do any of his work: in the case of a skilled workman, the reduction to any marked extent would greatly interfere with the work and thus a skilled mechanic could not lose more than 25 per cent. of his visual acuity without economic damage, and if he should be reduced to 15 per cent. he could not do any of his work. From the results of experience and of mathematical calculation by means of this formula, it is clearly shown that in trades demanding high vision, a one-eyed person loses 30 per cent. of his earning ability for the first year after the accident and 20 per cent. thereafter; for the lower grades it is 27 per cent. for the first year and 18 per cent. thereafter. Where there is a gradual loss of sight in one eye following an accident, in trades requiring higher visual demands, the proportion is 21 per cent. and in professions with lower visual demands, 18 per cent. The question of claim for damages by reason of the loss of one eye through accident is exhaustively discussed as well as specific injuries affecting the visual field, color sense or causing weak vision in any way. Consideration is likewise given to weak vision existing before the accident. The economic damage to the individual from loss of vision through accidents, depends on the percentage of the loss of earning ability on the wages that the plaintiff has been earning and on the character of his work and his age. Taking these facts into consideration, and accepting certain wage standards and probable duration of working life and the percentage of economic damage as factors, the damage to the individual can be exactly shown in dollars and cents. The settlement of claims for damages should take this economic damage into consideration as the principal element for settlement. This, however, is only one of the legal factors involved. It should be modified according to American law by reduction being made in favor of the defendant in case of extenuating circumstances or contributory negligence and addition made thereto of actual expense incurred by the plaintiff during his illness and damages for pain and anguish suffered by reason thereof: the amount thereof must always be empirically estimated by the courts.

115. **Cyclic Albuminuria.**—This condition is noticed by Tyler, who finds it present mostly in young persons, especially in those of neurotic temperament and with poor digestive systems. The distinguishing feature is that albuminuria is present part of the twenty-four hours and absent the remainder of the time, usually being absent on rising and at bedtime and appearing during the day. The theories of the condition are discussed but not very well determined. The upright position appears to be the essential factor in the production of this symptom. Its diagnosis is important and the following factors are necessary: "1. The demonstration of a persistent intermittent albuminuria unaccompanied by casts or other evidence of renal disease. 2. The elimination of disease of other organs, especially of a left ventricular hypertrophy. In order to reach this diagnosis the separate urine of each micturition for the entire twenty-four hours must be examined, and this examination must be repeated several times. Extreme care must also be taken, by means of centrifugation, to prevent overlooking casts, and there must be the most painstaking systematic examination of the heart and other organs. If the urine is never entirely free from albumin there is structural disease." The condition is probably harmless, although some claim that it means ultimate organic change. Medicines seem to be ineffectual. It may be present for years and disappear without obvious cause. A well regulated life without excesses is probably the best treatment.

125. **Osteitis Deformans.**—After reporting a case and discussing the condition, Atkinson summarizes the more modern views of the disease, that it commences as a chronic rarifying osteitis in which the normal compact tissue becomes finally porous and fresh bone is formed beneath the periosteum, finally undergoing the sclerotic changes so well marked in the latter stages of the disease. He calls attention to the resemblance between rachitis and osteitis deformans and mentions cases which seem to indicate that the dividing line between the bone deformities of children and adults is not always marked, though the disease described under the title of osteitis deformans is really seen only during middle and advanced life.

127.—See abstract in THE JOURNAL, XXXV, p. 145.

136. **Spinal Anesthesia in Obstetrics.**—The following is the summary of Clark's article: "1. That the subarachnoidal injection of cocain during labor is not without danger to both mother and child. 2. That the essential points in the technique of the operation are the same as those taught by Prof. Tuffier, absolute asepsis being the chief cornerstone. 3. That painless uterine contraction goes on, but that the loss of the force exerted by the contraction of the abdominal muscles delays the labor and instrumental delivery has frequently to be resorted to. 4. That in obstetrical practice, the headache and rise of temperature after the injection are as constant as in surgical cases, but the vomiting is more frequent. 5. That 'Explorations, versions, extractions, placental removal are readily done, but not with quite as great ease as under chloroform.' (Marx.) 6. That where the condition of the child or motner renders necessary the immediate use of forceps, or where manual dilation of the cervix is indicated, the results under spinal anesthesia have been most gratifying. 7. That, so far, there have been no unpleasant sequelæ following these injections noted. Finally, that the consensus of opinion at present is that spinal anesthesia in obstetrical practice will not take the place of chloroform or ether narcosis."

137. **Differentiation of Tubercle Bacilli.**—The method suggested by Comstock for differentiating tubercle from influenzal bacilli when both are combined in the same preparation are: "1. Thinly spread the suspected sputa, or other containing media, upon a cover-glass or slide. Allow it to become air-dried; then flame. Next apply Ziehl's solution, with the aid of heat, as for staining tubercle bacilli. Pass the preparation through 15 per cent. aqueous solution of nitric acid and wash in 60 per cent. alcohol. Rinse thoroughly in fresh water. Dry the preparation and then apply Loeffler's alkaline-methylene-blue, aided by heat, as Ziehl's solution was previously applied. Then wash thoroughly under a stream of fresh water. This will remove most of the stain from other elements in the sputa without danger of washing the fuchsin from the tubercle bacilli or the methylene-blue from the influenza bacilli. Lastly, dry the preparation and mount in balsam. The tubercle bacilli will retain a brilliant red color and the influenza bacilli will be stained blue. This method he claims to be original with himself.

144.—See abstract in THE JOURNAL, XXXVI, p. 982.

145.—Ibid.

146.—Ibid.

157.—See abstract in THE JOURNAL of July 13, ¶38, p. 145.

160.—This article appeared in THE JOURNAL, XXXVI, p. 537.

FOREIGN.

British Medical Journal, July 13.

On the Evolution of Myelopathic Albumosuria. T. R. BRADSHAW.—There is one point in the clinical history of this rare condition which, according to Bradshaw, has never before been determined, viz., the manner in which the albumose appears first in the urine. In all reported cases it has been present in large quantities, but it has never been ascertained whether it appears to begin in minimum quantities, and gradually increases or whether the maximum amount appears almost from the first. The possibility of the latter being the case is suggested by what we know of the onset of pancreatic diabetes. He has lately been consulted by a physician of eminence, a subject of this disorder, who has carefully observed his own case. The albumose was first observed in December, 1899, during an attack of mild pneumonia. The quantity was at that time minute, but has subsequently gone on, continually increasing and has reached a maximum of 10 parts per 1000. The case illustrates two important points, one of which is new: 1. The presence of the albumose in the urine is the earliest symptom of the disease, and may be observed for many months before there are any other indications of failing health, or any local signs of alterations in the skeleton. 2. If we may be permitted to generalize from the only case in which the point

has been investigated, the albumose is first excreted in small amounts; but, owing to the fact that at this stage the subject of the disease does not suffer any inconvenience from it he is not likely to consult a medical practitioner, and so the urine is generally not examined until the albumose has risen to a large amount. Its early discovery in the present instance was doubtless due to the fact that its onset closely coincided in time with an acute illness, and that the subject of it was a member of our own profession.

On Some Cases of Hemorrhage into the Skin and Suprarenal Capsules. PERCY S. BLAKER and BERNARD E. G. BAILEY.—The authors report four cases of children who were taken suddenly ill with vomiting in the night, followed by diarrhea with subcutaneous hemorrhages and death within a comparatively short period—less than twenty-four hours. The post-mortem examinations showed engorgement of the suprarenal bodies with hemorrhages. In two cases the blood from the unopened heart was examined bacteriologically, with negative results. The history throws no light on the causation of the disease, but the authors think the presence of hemorrhages under the skin and in the suprarenal capsules indicate some form of toxemia, and in the patients the similarity of symptoms and rapid and fatal termination indicate that the poisoning belongs to the same group as that in epidemic diarrhea and vomiting of children. In the latter, however, he has never met with the hemorrhagic conditions here observed and in three of the cases there was a hyperemic condition of Peyer's patches which is also absent in diarrhea. The question arises: What is the disease? They state the possibility of hemorrhagic smallpox of the fulminating variety. In one of these cases, however, the patient had two very good vaccination scars, and there was no history of smallpox or known source of contagion and no other cases followed. Infantile scurvy might suggest itself, yet there was no spongifying of the gums or tenderness of the limbs and the rapid course of the disease was against it. On the whole, they conclude that we have here a special disorder due to blood poisoning of some form, the nature of the poisoning being unknown. Reference is made to cases reported by Talbot, Andrews, Garrod, and Drysdale, apparently similar, with sudden onset, rapid fatal termination; but hemorrhages occurred in only two of them. Convulsions were prominent in the other two. The only morbid change found postmortem was hemorrhage of the suprarenal capsule, all the other organs being apparently healthy.

The Lancet, July 13.

Diagnosis and Treatment of Typhoid Fever. R. W. MARSDEN.—Marsden considers a recent acute illness commencing with lassitude, headache, chills, epistaxis, splenic enlargement, continuous pyrexia, rose spots, appearing in successive crops for several days, and lasting for three or four days with absence of leucocytosis and terminating by remissions, temperature gradually subsiding after seventeen or eighteen days, and accompanied by sudden profuse intestinal hemorrhage or symptoms of intestinal perforation, or further followed by a definite relapse; such a symptom-group may be with certainty diagnosed as typhoid. He lays stress on the serum diagnosis as important, considering the uncertainty of symptoms. In 209 out of 214 cases the blood examination was either in agreement or not at variance, but there are some possibilities of error, and he summarizes the Widal reaction as follows: A negative result, say at the end of the first week of illness, is against the diagnosis of enteric fever, while each succeeding negative result increases the doubt, so that if it is negative throughout the disease it is certainly something else than typhoid. In fact in all cases in which with approaching convalescence the serum reaction is still found negative, diagnosis of typhoid must be abandoned unless the physical signs and symptoms form such a group as he has before given. In all cases the diagnosis must be uncertain during the first week of illness. The only sign upon which absolute reliance can be placed is the appearance of the rose spots on several consecutive days, either during the primary attacks of a continuous fever at least seventeen or eighteen days in duration or during the relapse, though an otherwise similar attack accompanied by temporary enlargement of the spleen, or intestinal hemorrhage, etc., would require very clear bacteriologic evidence to prove its non-typhoid nature. As regards treatment, he favors the liquid diet in the beginning. The physical processes are so altered during the febrile state as to interfere with the proper digestion of other forms of food, and any other form of diet may irritate the ulcerated and catarrhal bowel. There are, however, many things which are more readily digested and assimilated than the precipitated casein of cow's milk. It is a matter of experience that in some cases of diarrhea the improvement is best obtained by altering the diet. The most constant objection urged is the danger of producing perforation by undigested particles, increasing the catarrhal state or mechanically causing rupture; this objection he considers comparatively slight. Another objection is the possibility of production of a temporary fever or either a definite relapse; this he also doubts. A more probable supposition is the increasing supply of bile by the administration of solid foods in such a way as to increase the number of bacilli poured into the intestines; but this is purely theoretical. As regards treatment, the use of baths with altered dietary is emphasized. He thinks that these are important factors in reducing temperature with its attendant evils; that the intellect is kept clearer and stupor lessened, and a general tonic action on the system exercised; that headache and insomnia are relieved; that the skin is kept softer and circulation improved; that emaciation is retarded, and the chances of cardiac failure and asthenia are reduced. The surgical treatment in typhoid is mentioned and the importance of improvement in our diagnosis specially emphasized in this regard.

Journal of Laryngology, Rhinology and Otology, July.

Some Observations and Remarks on the Air-Currents in Nasal Respiration. CHARLES A. PARKER.—Parker has investigated the air currents in normal respiration by insufflation of lycopodium powder in inspiration and the course of cigarette smoke in expiration, and gives his results as follows: "1. That during quiet inspiration in a normal nose the air traverses the middle, superior, and probably the fourth meatus. 2. That inspiration is impeded by: *a*, Spurs and deviations of the septum and enlargements of the inferior turbinated body, if they project forwards and upwards. (For practical purposes I think a rule may be laid down that if such abnormalities cross and break an imaginary line drawn from the anterior extremity of the inferior meatus—i. e., just internal to the vestibule—to the anterior end of the middle turbinate, they will cause obstruction.) *b*, Enlargements of the middle turbinate body, polypi, etc. *c*, Hypertrophies and growths springing from the vault of the nasopharynx. 3. That in expiration the air traverses chiefly the inferior meatus. 4. That expiration will be more especially affected by: *a*, Hypertrophies of the posterior end of the inferior turbinate. *b*, Hypertrophies, etc., causing stenosis of the inferior meatus."

The Dublin Journal of Medical Science, July.

Inoculation as a Preventive Against Typhoid Fever. HENRY M. CULLINAN.—The author believes in the efficiency of inoculation with anti-typhoid serum as a prophylactic of disease. During the epidemic which occurred at the Richmond District Asylum he commenced and inoculated in rapid succession 307 female patients; it was suggested by some of his medical friends that he should inoculate only one-half and leave the rest for control, but he could not follow the suggestion. Of those inoculated out of a total of 511 altogether only 7 contracted the disease and almost all of these were in the incubating stage, he believes, at the time of inoculation. Before this the disease had rapidly spread and 18 cases had occurred among the patients. The employees, who were generally not inoculated, suffered much more severely than did the patients. The constitutional disorders from the inoculation were not of much importance, though the temperature rose in some cases to 103 and 104. The total number of cases inoculated were 511 out of a total of 655 who were liable to be attacked. Of the 511 only 7 were attacked after the operation, and 47 of the cases of typhoid occurred among the uninoculated. Out of 114 nurses, 17, that is 14.9 per cent. were attacked, as against 6.83 per cent.

of the patients. He believes that the method was certainly of use in the epidemic at the Richmond District Asylum.

Annales de Dermatologie (Paris), June.

Lupiform Syphilis. GAUCHER.—A number of cases of lupus have been reported recently as cured by mercurial treatment. Gaucher believes that these must have been cases of unrecognized syphilis and relates the following observation in support of this view. An ulcerative lesion appeared on the nose of a girl of 15, involving both skin and mucosa. After many fluctuations between improvement and aggravation, the lesion became chronic and destroyed a portion of the integument. A number of dematologists declared the lesion to be lupus, but it resisted all the usual measures. When seen by Gaucher, the patient was 47 years old. He instituted mercurial treatment with the result that the lesion healed at once. This phenomenon suggested that it must have been a manifestation of tardy heredo-syphilis, and examination of the eyes revealed the ocular stigmata of hereditary syphilis, which no one had suspected before.

Bazin's Indurated Erythema. U. MANTEGAZZA.—Two cases are described in detail to confirm the writer's theory that this erythema is a variety of scrofuloderma. The symptoms, pathologic anatomy and the marked reaction to tuberculin indicate the tuberculous origin of both. The differences are due to the different virulence of the pathogenic agent and the different route it travels.

Chronic Ulceration of the Face in Tabes. G. THIBIERGE. The patient was a man of 45, and the ulcerations developed under the same conditions as the buccal mal perforant of tabes, evidently a tabetic trophodermatosis, but they appeared twenty years before any other symptoms of tabes. They occupy the right side of the upper lip and nostril—the skin around them being normal—secrete a little serum and shed a brownish scab from time to time, but are always painless and never more than 1 mm. in depth. The teeth dropped out spontaneously after a few years, and typical tabes developed after twenty years. Girandeau has reported a similar case, nine years before the appearance of the tabes, in a man of 29. The ulcerations involved the brow, both sides of the nose and both ears. The sensation of pain in the face was lost in both cases; but heat and contact perceptions, and the sensibility of the remainder of the body were intact. Both patients presented eye symptoms, the visual field being much reduced, with ocular vertigo and external strabismus in one eye, and there was a history of mild and brief syphilis in youth. Mercurial treatment had no influence on the ulcerations.

Archives Orientales de Med. et de Chir. (Paris), June.

Phimosis as a Cause of Lithiasis. RECCAS.—Congenital phimosis is an important factor in the production of lithiasis of the urethra and bladder. A dozen cases are described showing the evident connection between the phimosis and the development of calculi in infants and adults, and the complete recovery, without recurrence, after the phimosis had been operated. Reccas observes that he has never seen a case of lithiasis, even of the bladder, nor of phimosis among the Jews, who practice circumcision the eighth day after birth. Both are frequent among the Mahometans, who do not circumcise until much later.

Bulletin de l'Academie de Medecine (Paris), July 2.

Pulmonary Affections Originating in Upper Air-Passages. M. DU MAGNY.—Pulmonary congestion and bronchopneumonia may be the direct result of the propagation of some suppurative process in the nose, frontal or maxillary sinus, ear or pharynx. The connection with the primary lesion may be unrecognized, or the latter may be ignored. The pulmonary process, if acute, commences with a sudden invasion of the upper lobe of the lung, with retroscapular pain and signs of parenchymatous congestion and possibly fever of 40 C. The lesion is shown by auscultation to be located principally at the hilus of the lung, at the opening of the upper bronchus into the lung. The attack reaches its height in a few hours and usually subsides in five or six days. This character of sudden and transient congestion and its frequent recurrence, are significant in the diagnosis of the affections originating above. Subacute and chronic cases simulate the onset of tuberculosis: the persisting congestion of the apex, the sputa, loss of appetite and emaciation. The differentiation is possible only by the bacteriologic evidence of pyogenic microbes, instead of the tubercle bacillus, in the sputa and the discovery of the purulent focus above. The physical signs resemble more tracheo-bronchial adenopathy than the permanent indurations of tuberculosis, and their location at the angle of the scapula and at the origin of the upper bronchus, is an important aid in diagnosis. He describes eight cases followed for months or years. The bronchitis recurred winter after winter and simulated tuberculosis, until the discovery of the suppurative lesion and its cure, abolished the pulmonary affection. The removal of nasal polypi or adenoid vegetations or the cure of sinusitis or of a suppurative otitis, banished in a few days the pulmonary symptoms that had resisted all treatment for months or years. He noticed that the pulmonary lesion was always on the side on which the patient habitually slept. Experiments on animals showed that methylene blue injected into the nasal fossæ or a trephined sinus, induced catarrhal symptoms in the upper lobe of the lung on the side on which the animal was forced to recline. The stain could be traced in its course down the side of the larynx, trachea and upper bronchus. It was never detected in the lower bronchus, thus confirming the invariable clinical experience. Tests with pyogenic microbes confirmed these data, and also demonstrated that the lung was not affected if the animal reclined in its usual position, that is, not on the side.

Bulletin de la Societe des Hop. de Paris, June 27.

Success of Gasterin in Therapeutics.—Several communications on this subject appear in the *Bulletin*. Le Gendre states that in his experience at the Tenon hospital he has found the natural gastric juice from the isolated stomachs of dogs, as prepared by Frémont, to which he has given the name of gasterin, the most powerful remedy we possess against insufficient gastric digestion and intestinal fermentations. He reports several instances of its efficacy, especially marked in some cases of post-operative gastric disturbances, in the anorexia and gastric intolerance of pregnancy and subsequent to abortion, in arresting the excessive thirst accompanying certain dyspepsias, and in rebellious diarrhea. Rendu confirms these assertions and cites the case of the daughter of a physician who was evidently passing into a rapid decline after a pleurisy, with absolute gastric intolerance. A few doses of gasterin restored the appetite and digestive functions to normal. Frémont describes a case of enteritis and emaciation from months of diarrhea, cured in a few days with gasterin. The enteritis was evidently due to secretory insufficiency of the stomach. There is no pain in these cases. The nerves are insufficient for transmitting pain as well as for controlling the muscular action of the stomach and its secreting functions. The intestine takes care of the insufficiently digested matters for a time, but finally they irritate the walls and diarrhea follows. He concludes: "How many debilitated, anemic, neurasthenic persons vegetate in an apparently incurable condition because their physician has not discovered their gastric insufficiency—the primal cause of the trouble—and prescribed the appropriate remedy." Mathieu describes fifteen cases cured with gasterin and concludes from his experience that it frequently improves the digestion in hypochlorhydria, accompanied by more or less neurastheria. Strength returns under its influence and he considers it "a most remarkable remedy, actually superior to all those that have been used in analogous conditions." Even in case of cancer of the stomach, he adds, if it is tolerated, it may produce marked improvement for a time.

Chronic Diarrhea and Insufficiency of the Gastric Juice. SOUPAULT.—The connection between insufficiency of the gastric juice and chronic diarrhea proclaimed by Frémont, is confirmed by Soupault's experience. He cured ten patients with rebellious protracted diarrhea, by administering hydrochloric acid in the form of a lemonade, a glass to be taken at meals. His formula is 6 to 8 gm. hydrochloric acid; 150 gm. syrup of

lemon and water to make one liter. The hydrochloric acid acts in the same way and seems to be as effective as gasterin. He has confirmed the fact noticed by others that the stomach in these cases is emptied very rapidly. Food ingested only fifteen to thirty minutes before is frequently found in the stools. The food matters which pass into the intestine without having been digested by the gastric juice, evidently irritate and induce an exaggerated peristalsis, which entails their rapid evacuation and results in a chronic enteritis. Gasterin or hydrochloric acid aids in the gastric digestion of the food matters, retards their evacuation from the stomach and thus removes the cause of the diarrhea.

Echo Medical (Lille), July 7.

Effect of Yeast on the Leucocytes. DELEARDE.—The therapeutic administration of brewer's yeast has a decided influence on the leucocytes in the blood. In some persons the number of white corpuscles rapidly increases and then diminishes; in others the number decreases from the start. The polynuclears, generally speaking, are increased in numbers. The tests were made on healthy and tuberculous persons, and about an equal number of each reacted with the increase or the decrease. When yeast is administered in furunculosis, the benefit first experienced rapidly subsides, and it is necessary to suspend it and commence over again. This may correspond to the marked but transient, leucocytosis observed. The absence of leucocytosis in others may explain why some persons fail to derive any benefit from the yeast.

Progres Medical (Paris), July 6.

Membrano-Ulcerative Tonsillitis. A. RAOULT.—Thiry has recently observed 14 cases of membrano-ulcerative lesions, 4 of which were tonsillitis and 5 stomatitis. Raoult describes 5 new cases, the patients all adults, in all of which the fusiform bacillus and Vincent's spirillum were found more or less numerous. Several were bilateral lesions. They frequently resisted treatment for a long time in the city, but healed in a few days after removal to the country. Stomatitis and tonsillitis co-existed in one case. One tonsil had been completely destroyed by secondary infection. The patients complained of slight fever, difficulty in swallowing and general depression, painful and swollen glands in the vicinity but no chills. The patches of membrane were wiped off by the patients themselves, in some cases leaving an ulcerative lesion. The breath was fetid and there was considerable pain at the site of the lesion. The affection is evidently identical with Vincent's diphtheroid angina, and Athenasiu's membrano-ulcerative angina in children, of which it is a later stage. In one case there was a double relapse, at first on the same side and then on the other, the patient much debilitated by the protracted course. Recovery was not quite complete December 15, and the first symptoms had been noted September 15.

Elimination of Urea in the Sputa in La Grippe. DELORE. Three months after an attack of la grippe, the effects of which lingered in a bronchial affection, the patient, an elderly arthritic brain-worker, presented symptoms indicating uremia, but the kidneys showed normal elimination of urea. Fine fern-shaped crystals of urea were found also in the transparent, mucous sputa. Expectoration was accompanied by a smarting sensation. The diagnosis was intoxication from nicotin, as the man smoked six times a day, and the assumption was that the nicotin enhanced the organic susceptibility to the urea, which was being eliminated in normal amounts in the blood, sweat and sputa. A prolonged hot bath and deprivation of tobacco cured the bronchitis and, with it, all the other symptoms.

Jahrbuch f. Kinderheilkunde (Berlin), May.

Empyema in Childhood. A. WUERTZ.—Eight out of 18 children with empyema recovered, 4 without and 4 in spite of complications. Four of those who died—from 5 to 16 months old—had no complications. All the cases were unilateral and the little patients preferred to lie on the affected side. The respiration varied from 32 to 148 and the pulse from 120 to 148. The heart was displaced in 10—to the right in 7. The liver rose above the costal arch in 6. In 4 cases furunculosis and abscesses denoted a tendency to suppuration.

June.

The Anemia of Young Children. GEISSLER and JAPHA.—It is evident that some of the cases now classified as pseudoleukemic anemia belong to the group of the simple, severe, chronic anemia of young children—splenic anemia. Others possibly should be classed as leukemia, but cases observed at Heubner's clinic, indicate that although the blood presents the leukemia formula, the affection may terminate in recovery. Alterations in the red corpuscles, especially the appearance of megaloblasts, should be considered pathologic in young children. The total number of leucocytes and the proportion of lymphocytes in this splenic anemia is normally larger than usual. A polynuclear leucocytosis may be transient. The severe forms of anemia in children are invariably accompanied by an enlargement of the spleen, but it may be enlarged also in mild anemia and even in its absence. The twenty-six cases described demonstrate the existence of this disease of the blood, in young children, especially in those with rhachitis. It ranges from a slight decrease in the hemoglobin and the number of the reds to the appearance of megaloblasts.

Histologic Examination of the Bones of Children Treated with Suprarenal Extract. W. STOELTZNER.—Anatomic and histologic study of sections of the bones of children who had been treated with suprarenal extract during life, showed almost normal composition of the bones at the points usually occupied by the pathologic osteoid tissue in rhachitis. This research establishes a scientific foundation for treatment with suprarenal extract, which is lacking for other methods of treatment.

Wiener Klinische Rundschau, July 7.

Biologic Differentiation of Blood Specimens. I. HONL.—The Uhlenhuth and Wassermann method of differentiating specimens of blood has been thoroughly tested by Honl, who confirms in every respect the claims of the discoverers of the method.

[Other exchanges bring similar corroboration from all parts of the world.—ED.]

Pneumotyphoid. A. HOFF.—A young man, previously healthy, complained of persistent headache, depression, weakness and trembling of the limbs and lips; the tongue was dry and coated, and the throat congested. The other organs were sound except for a slight unilateral bronchial lesion. In a few days the right lower lobe was entirely involved. The fever and cerebral symptoms indicated typhoid, which was confirmed by roseola and enlargement of the spleen. Widal's and the diazo-test were positive by the third day. The course of the disease corroborated the diagnosis of typhoid fever localized in the lung. There was no expectoration and after the crisis the symptoms subsided by the twenty-second day. Three days later an extensive, rebellious erysipelas appeared on the right thigh, and the much debilitated patient succumbed in three days. Klebs has shown that erysipelas in typhoid patients can be caused by the typhoid bacilli and Hoff considers it in this case an indication that the typhoid bacilli had regained their virulence, and that it was thus a kind of relapse. He considers it possible that the bacilli might have reached the lung by way of the blood from the intestines or urogenital tract, passing from the stomach into the intestines and thence into the lymph and blood circulation, without causing a lesion in the intestines. Kreibich has reported a case, in which he found the colon bacillus in pure cultures in a case of pneumonia. Hoff admits, however, that the typhoid bacillus might have been inhaled. Gerhardt has noted that 10 per cent. of typhoid patients have an ulceration in the pharynx, and that this ulceration may appear as the first localization of the disease.

Zeitschrift f. Tuberkulose (Leipsic), ii, 2.

Four Cured Cases of Tubercular Pneumothorax. L. SPENGLER.—The fact that tubercular pneumothorax is curable has been demonstrated again by four new cases reported by Spengler of Davos, and a fifth cured except for the persistence of a serous exudate. In four of the cases a pulmonary lesion was healed at the same time. The most favorable chances for recovery are afforded by the development of an extensive exudate, but no means have yet been devised to safely induce this

exudate in man, although injections of silver nitrate accomplish this result in dogs. The formation of the exudate is favored by leaving the bed, but when a certain amount of fluid has accumulated, symptoms of compression and dyspnea appear, compelling the patient to return to bed. Spengler waits before puncturing until three weeks have passed without evidences of air in the pleural cavity. This indicates with considerable certainty that the hole in the pulmonary pleura has become permanently closed. Every exudate is accompanied by more or less deposit of fibrin on the pleuræ. This tends to glue the edges of the hole together, aided by the pressure of the accumulated fluid. By the end of the three weeks, this deposited fibrin has become organized into connective tissue more or less, and the compressed organs can now be relieved by withdrawing a small amount of the fluid—not more than 500 to 700 c.c.—after the nature of the exudate has been determined by exploratory puncture. A week or two later, a liter of the fluid may be withdrawn and two to four weeks after this, 1.5 to 2 liters. Further aspiration is seldom necessary. Sero-fibrinous exudates, the sero-purulent and the exudates resembling pus but free from pyogenic micro-organisms, are all amenable to this method of treatment. One of his five cases recovered without the necessity of a puncture, but he punctured twenty-two times in the other four cases. The character of the exudate remained unchanged by the intervention.

Operative Treatment of Pulmonary Tuberculosis.—H. SARFERT.—As the result of extensive experimental research Sarfert announces that tubercular cavities do not form in the lungs from the action of the tubercle bacillus alone, nor from the streptococcus alone. There must always be a primary tubercular lesion. The streptococcus will then colonize in it and the combination of the two micro-organisms results in the production of the cavity. Treatment with tuberculin or other specific measures affects only one of these parasites, which explains its failure to cure these cases. If the other parasite could be evacuated by an operation, the specific treatment would then have a chance to succeed. When a cavity has been spontaneously evacuated, the walls are covered with caseous matter in which various bacteria continue to vegetate. The vessels are dilated with imminent danger of rupture and flooding of hitherto sound parts of the lung with blood from the lesion, spreading the infection even if the hemorrhage is not directly fatal. These conditions, as well as an active cavity, require operative treatment. Sarfert has devised a method of operating, worked out on hundreds of cadavers, and has applied it on one patient with entire success, as mentioned in THE JOURNAL at the time, XXXVI, p. 693. He resects the second rib from the sternum to the axilla; mobilizes and shells out the apex of the lung. He is then able to determine by palpation the site of the cavity, its size, etc., through the wall of lung tissue, which feels like a thick rubber ball. He then incises the wall and tampons the cavity. This incision affords ample oversight of the cavity, vessels, etc. In the patient operated on, an isolated, large cavern of the right upper lobe was correctly diagnosed. The apex of the lung with the cavity was shelled out, and the latter entered through a pleuro-fissure. The bleeding was minimal, and respiration undisturbed. There was no danger of the development of a pneumothorax, as in consequence of the extensive adhesions between the pleural walls there was no longer a pleural cavity. The large space left after the operation between the apex of the lung and the wall of the thorax gradually filled up with granulations and the cavity became obliterated by cicatricial retraction. Sarfert's monograph has been published in book form (J. Booch, Werdau i. Sa.), with illustrations. One shows the tubercular infiltration of a rabbit's lung after intratracheal injection of a culture of tubercle bacilli, and later, the formation of cavities, after injection of streptococci.

Gazzetta degli Ospedali (Milan), July 4.

Tubercular Pleuritis. DIEULAFOY.—Acute, sero-fibrinous, cold pleurisy, even the apparently idiopathic variety, is always tubercular, although it may commence with a sudden, acute onset. The pleurisy may be secondary to a pulmonary lesion or it may be the sole localization of the tubercular infection. The cytodiagnosis depends on the composition of the effusion in case of cardiac lesions, in Bright's disease on the endothelial desquamation, in pneumococcus pleurisy on the leucocytosis and in the tubercular, sero-fibrinous pleurisy on the lymphocytosis. Clinical experience demonstrates that this acute, *a frigore* pleurisy may terminate in complete recovery, but this is no evidence against its tubercular nature, as tubercular manifestations on the pleura heal more readily than on any other serous membrane. Persons recovering from a pleurisy of this kind should be treated by the hygienic and other measures indicated for tuberculosis.

Giornale della Accademia di Medicina (Turin), lxiv, 5.

Microscopy of the Vessels of the Conjunctiva. P. BAJARDI.—With a microscope magnifying 63 diameters, it is possible to watch the circulation in the vessels of the conjunctiva and retina during life. Bajardi observed the effects of various drugs in this way; cocain induces in ten to fifteen minutes a pronounced constriction of all the vessels, the smaller ones being entirely emptied of blood. With a 5 per cent. solution, this constriction was pronounced for nearly four hours after instillation, after which it rapidly subsided. After instillation of two drops of suprarenal extract, all the superficial and deep vessels become constricted to an intense degree for about an hour, gradually returning to normal by the end of the second hour. Instillation of a 1 per cent. solution of eserin constricts the vessels for one and one-half hours. All these substances retard the circulation, and the conjunctiva appears less transparent, as if it were suffused with a yellowish fluid, which brings certain capillaries, previously invisible, into view.

Books Received.

ANNUAL AND ANALYTICAL CYCLOPEDIA OF PRACTICAL MEDICINE. By Charles E. de M. Sajous, M.D., and one hundred Associated Editors. Assisted by Corresponding Editors, Collaborators and Correspondents. Illustrated with Chromo-lithographs, Engravings and Maps. Volume VI. Cloth. Pp. 1043. Price, $5.00 per volume. Philadelphia, New York, Chicago: F. A. Davis Co. 1901.

ANESTHETICS AND THEIR ADMINISTRATION. A Text-Book for Medical and Dental Practitioners and Students. By Frederic W. Hewitt, M.A., M.D. Cantab., Anesthetist to His Majesty the King. With Illustrations. Cloth. Pp. 528. Price, $4.00. London and New York: MacMillan & Co. 1901.

THE JOHNS HOPKINS HOSPITAL REPORTS. Paper. Pp. 131. Baltimore: Johns Hopkins Press. 1901.

EIGHTEENTH ANNUAL REPORT OF THE PRESBYTERIAN HOSPITAL OF THE CITY OF CHICAGO, with the Seventeenth Annual Report of the Ladies' Aid Society, 1901. Paper. Pp. 65.

MILITARY GOVERNMENT OF PORTO RICO from October 18, 1898, to April 30, 1900. Appendices to the Report of the Military Governor. Paper. Pp. 359. Washington: Government Printing Office. 1901.

PROCEEDINGS OF THE NEW YORK PATHOLOGICAL SOCIETY, March, 1901. Paper. Pp. 17. New Rochelle, N. Y.: Published by the Society. 1901.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF PHILADELPHIA, July, 1901. Paper. Pp. 13. Philadelphia: Published by the Society. 1901.

THE NEWER REMEDIES, Including Their Synonyms, Sources, Methods of Preparation, Tests, Solubilities, Incompatibles, Medicinal Properties, and Doses as far as Known, Together with Sections on Organo-Therapeutic Agents and Indifferent Compounds of Iron. A Reference Manual for Physicians, Pharmacists, and Students. By Virgil Coblentz, A.M., Phar. M., Ph.D., F.R.C.S., Professor of Chemistry and Physics in New York College of Pharmacy. Third Edition, Revised and very much Enlarged. Pasteboard. Pp. 747. Philadelphia: P. Blakiston's Son & Co. 1899.

New Patents.

Patents of interest to Physicians, etc., July 9 and 16:

678,212. Fumigating apparatus. Gilbert E. Alphin, Mount Olive, N. C.
678,330. Halogen albumin, and making same. Ferdinand Blum, Frankfort-on-the-Main, Germany.
678,333. Tonsillotome. George Ermold, Elizabeth, N. J.
678,334. Tonsillotome. George Ermold, Elizabeth, N. J.
678,242. Atomizer. Hermann Goltermann, East Orange, N. J.
677,879. Hernial truss. Wm. A. Middaugh, Kalamazoo, Mich.
678,272. Divider and bag-filler for powders. Ludwig Neumayer, Merseburg, Germany.
678,284. Medicine chest. Jacob Schaffer, New York City.
678,714. Vaporizer, Anton Bulling, Munich, Germany.
678,401. Salicylic ether of quinin. Fritz Hofmann, Elberfeld, Germany.
678,568. Syringe. Richard J. Hughes, Dedham, Wis.

678,417. Surgical jaw splint and support. Wm. G. E. Muller, Paterson, N. J.

34,779. Design, inhaler. John J. McPherson, Montgomery, Ala

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., during the period June 27 to July 17, 1901, inclusive:

Frank E. Artand, major and surgeon, Vols., leave of absence granted on the expiration of which he will proceed from Lake Providence, La., to San Francisco, Cal., en route for duty in the Division of the Philippines.

Percy M. Ashburn, lieutenant and asst.-surgeon, U. S. A., leave of absence granted.

John M. Banister, major and surgeon, U. S. A., member of a board at West Point, N. Y., to examine candidates for admission into the U. S. Military Academy.

Irvin E. Bennett, captain and asst.-surgeon, Vols., leave of absence from China Relief Expedition extended to include Aug. 26, 1901, when he will report for transportation to Manila, P. I., for duty in the Division of the Philippines.

Horace D. Bloomberg, lieutenant and asst.-surgeon, U. S. A., recently appointed, will proceed from Easton, Pa., to Plattsburg Barracks, N. Y., for temporary duty.

Reuben M. Bonar, captain and asst.-surgeon, Vols., recently appointed, is relieved from duty at Camp McKinley, Honolulu, H. I., and will proceed to Manila, P. I., for assignment in the Division of the Philippines.

William C. Borden, major and surgeon, U. S. A., leave of absence granted.

Roger Brooke, Jr., lieutenant and asst.-surgeon, U. S. A., recently appointed, to proceed from Sandy Springs, Md., to Fort Myer, Va., for temporary duty.

Robert Burns, major and surgeon, Vols., recently appointed, leave of absence granted.

Robert E. Caldwell, captain and asst.-surgeon, Vols., recently appointed, is relieved from duty on the transport *Rosecrans* and will report for transportation to Manila, P. I., for assignment in the Division of the Philippines.

George H. Calkins, contract surgeon, from Tonawanda, N. Y., to Fort Meade, S. D., for post duty.

William B. Davis, major and surgeon, U. S. A., member of a board at West Point, N. Y., to examine candidates for admission into the U. S. Military Academy.

Matthew A. DeLaney, lieutenant and asst.-surgeon, U. S. A., recently appointed, is assigned to temporary duty at Fort Monroe, Va.

John Ryan Devereux, lieutenant and asst.-surgeon, U. S. A., recently appointed, will report for duty to the commanding officer, Washington Barracks, D. C.

Guy L. Edie, major and surgeon, U. S. A., from the Department of California to Columbus Barracks, Ohio, for post duty.

Peter C. Field, lieutenant and asst.-surgeon, U. S. A., recently appointed, will proceed from New Brunswick, N. J., to Fort Slocum, N. Y., for temporary duty.

Charles C. Geer, lieutenant and asst.-surgeon, U. S. A., recently appointed, and now at Belton, S. C., is assigned to temporary duty at Fort McPherson, Ga.

George H. R. Gosman, lieutenant and asst.-surgeon, U. S. A., recently appointed, and now at Brooklyn, N. Y., is assigned to temporary duty at the U. S. Military Academy, West Point, N. Y.

William W. Gray, major and surgeon, U. S. A., from the Division of the Philippines to Fort Thomas, Ky.

Abram L. Haines, major and surgeon, Vols., recently appointed, and now at Albany, N. Y., will proceed to San Francisco, Cal., en route for assignment to the Division of the Philippines.

Paul S. Halloran, lieutenant and asst.-surgeon, U. S. A., recently appointed, will proceed from York, Pa., to Fort Wadsworth, N. Y., for temporary duty.

George L. Hicks, Jr., major and surgeon, Vols., is assigned to the 38th Infantry, Vols.

Henry F. Hoyt, major and surgeon, Vols., leave of absence from the Division of the Philippines extended.

Thomas T. Jackson, captain and asst.-surgeon, Vols., having tendered his resignation, is honorably discharged, to take effect July 15, 1901.

Nathan S. Jarvis, captain and asst.-surgeon, U. S. A., having been duly examined by a board of officers under the provisions of an act of Congress, approved March 2, 1901, and pronounced by the board eligible for retirement, and having been duly appointed an assistant-surgeon under the authority conferred by the said act, is, by direction of the President, placed upon the retired list of the army, to take effect June 29, 1901.

William P. Kendall, major and surgeon, U. S. A., member of a board at West Point, N. Y., to examine candidates for admission into the U. S. Military Academy.

H. Newton Kieruff, contract surgeon, from the transport *Kintuck*, to Fort Stevens, Oregon, for temporary duty.

Conrad E. Koerper, lieutenant and asst.-surgeon, U. S. A., recently appointed, will report to the commanding officer, Washington Barracks, D. C., for temporary duty.

William C. Le Compte, contract surgeon, from Fort Du Pont, Del., to duty at Fort Niagara, N. Y.

William F. Lewis, captain and asst.-surgeon, U. S. A., is detailed as a member of an examining board at Fort Leavenworth, Kan.

Robert J. McAdory, contract surgeon, relieved from duty at Fort McDowell, Cal., and will proceed to Honolulu, H. I., for duty at Camp McKinley.

George L. Marion, contract surgeon, leave of absence granted.

Charles F. Mason, captain and asst.-surgeon, U. S. A., member of an examining board at San Antonio, Tex., vice Lieut.-Col. C. B. Byrne, deputy surgeon-general, relieved.

Paul Mazzuri, captain and asst.-surgeon, Vols., recently appointed, relieved from the Department of Cuba, to proceed to San Francisco, Cal., en route to the Division of the Philippines for assignment.

William O. Owen, major and surgeon, U. S. A., from Fort Thomas, Ky., to San Francisco, Cal., en route to the Division of the Philippines for duty.

Rudolph S. Porter, major and surgeon, Vols., recently appointed and now at Chicago, Ill., will proceed to San Francisco, Cal., en route for duty in the Division of the Philippines.

Ernest L. Ruffner, lieutenant and asst.-surgeon, U. S. A., recently appointed, and now at Buffalo, N. Y., is assigned to temporary duty at Columbus Barracks, Ohio.

John L. Shepard, contract surgeon, now at Chicago, Ill., will proceed to Fort Logan, Colo., for post duty.

Henry R. Stiles, captain and asst.-surgeon, U. S. A., leave of absence extended.

Robert M. Thornburgh, lieutenant and asst.-surgeon, U. S. A., leave of absence granted, on the expiration of which he will proceed to Fort Slocum, N. Y., for temporary duty.

Robert P. Updyke, contract dental surgeon, from Washington, D. C., to duty at Fort Leavenworth, Kan., ten days' delay granted in complying with this order.

Navy Changes.

Changes in the Medical Corps of the Navy for the week ending July 20, 1901:

Asst.-Surgeon F. M. Bogan, detached from the *Scorpion*, when put out of commission, and ordered to the *Machias*.

P. A. Surgeon C. P. Bagg, detached from the *Culgoa*, and ordered to the *Yorktown*.

Surgeon C. J. Decker, detached from the *Newark*, when put out of commisssion, and ordered home to wait orders.

Asst.-Surgeon W. H. Bucher, detached from the Naval Hospital, Norfolk, Va., and ordered to the *Dixie*, July 22.

Asst.-Surgeon P. E. McDonnold, ordered to duty at the Naval Museum of Hygiene, Washington, D. C., July 25.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended July 19, 1901:

SMALLPOX—UNITED STATES.

California: San Francisco, June 30-July 7, 1 case.
District of Columbia: Washington, July 6-13, 1 case.
Illinois: Chicago, July 6-13, 3 cases.
Kansas: Wichita, July 6-13, 1 case.
Louisiana: New Orleans, July 6-13, 1 case
Massachusetts: July 6-13, Boston, 1 death; Holyoke, 2 cases; New Bedford, 1 death.
Michigan: Detroit, July 6-13, 1 case.
Minnesota: Minneapolis, June 30-July 7, 2 cases.
New Hampshire: Manchester, July 6-13, 1 case.
New Jersey: Newark, July 6-13, 1 death.
Ohio: Cincinnati, July 5-12, 3 cases; Cleveland, July 6-13, 8 cases, 1 death; Toledo, July 6-13, 1 case.
Pennsylvania: Lebanon, July 6-13, 6 cases; Philadelphia, July 6-13, 3 cases, 1 death; Pittsburg, July 6-13, 2 cases.
Tennessee: Memphis, July 6-13, 1 case.
Utah: Salt Lake City, June 30-July 6, 2 cases.
Washington: Tacoma, June 30-July 7, 1 case.

SMALLPOX—FOREIGN.

Austria Hungary: Prague, June 22-29, 1 case.
Belgium: Antwerp, June 15-29, 2 deaths.
Canada: British Columbia, Victoria, June 15-30, 2 cases.
China: Hongkong, May 25-June 1, 1 case, 1 death.
Colombia: Panama, July 1-8, 5 cases, 1 death.
Ecuador: Guayaquil, May 11-June 8, 7 deaths.
Egypt: Cairo, June 18-24, 1 death.
France: Paris, June 22-29, 10 deaths.
Great Britain: Dundee, June 22-29, 1 case; Glasgow, June 28-July 5, 9 cases, 1 death; Liverpool, June 15-29, 4 cases, 2 deaths; London, June 22-29, 5 cases, 2 deaths.
India: Bombay, June 11-18, 6 deaths; Calcutta, June 7-15, 6 deaths; Karachi, June 2-9, 1 case, 1 death; Madras, June 1-13, 9 deaths.
Italy: Messina, June 22-29, 12 cases; Naples, June 23-30, 170 cases, 32 deaths.
Russia: Moscow, June 15-22, 7 deaths; Odessa, June 15-29, 3 cases; St. Petersburg, June 15-22, 1 death; Warsaw, June 8-15, 3 deaths.
Spain: Corunna, June 22-29, 3 deaths; Valencia, June 8-23, 1 death.
Switzerland: Geneva, June 15-22, 1 case.

YELLOW FEVER.

Costa Rica: Port Limon, July 4, 1 case.
Cuba: Cienfuegos, July 15, 1 case.
Mexico: Vera Cruz, June 30-July 6, 6 cases, 4 deaths.

CHOLERA.

India: Bombay, June 11-18, 3 deaths; Calcutta, June 8-15, 53 deaths; Madras, June 1-14, 1 death.

PLAGUE.

Africa: Cape Town, to June 22, 735 cases, 354 deaths; June 15-22, 21 cases.
China: Hongkong, May 25-June 1, 215 cases, 207 deaths.
India: Bombay, June 11-18, 54 deaths; Calcutta, June 8-15, 48 deaths; Karachi, June 29, 28 cases, 25 deaths.
Japan: Formosa, June 23, epidemic; Nagasaki, June 1-10, 1 death on U. S. S. *Kintuck*.
Mauritius: June 13-20, 2 cases, 1 death.